

636679

Report Number: 214-TRC-03-010

Safety Compliance Testing For FMVSS 214

Side Impact Protection

Indicant

DaimlerChrysler

2003 Mercedes-Benz C240 4-door Sedan

NHTSA Number: C30513

Transportation Research Center Inc.

10820 State Route 347

P. O. Box B-67

East Liberty, OH 43319



Test Date: May 5, 2003

Final Report: May 16, 2003

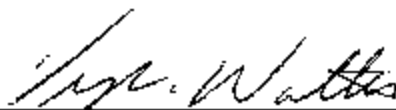
**U. S. Department Of Transportation
National Highway Traffic Safety Administration
Enforcement**

**Office of Vehicle Safety Compliance
400 Seventh Street, S. W.
Room No. 6111 (NVS-220)
Washington, DC 20590**

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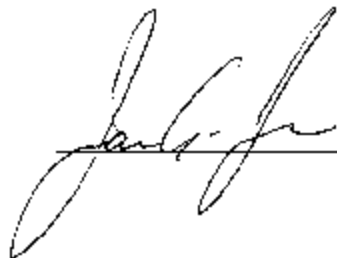
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16. Abstract This 55/28 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2003 Mercedes-Benz C240 4-door sedan in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 (except the test was conducted 8 km/h (5 mph) faster than the standard specified) to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on May 5, 2003. The impact velocity of the Moving Deformable Barrier (MDB) was 62.1 km/h, and the ambient temperature at the struck (driver's side) side of the target vehicle at the time of impact was 21.1° C. The target vehicle's post-test maximum crush was 260 mm at Level 3. The test or target vehicle's performance is given below: <table border="1"> <thead> <tr> <th></th> <th>Front SID-II3</th> <th></th> <th>Rear SID-II3</th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td>40.9</td> <td>g's</td> <td>55.3</td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td>34.2</td> <td>g's</td> <td>61.2</td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td>60.5</td> <td>g's</td> <td>46.3</td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td>50.7</td> <td>g's</td> <td>53.8</td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td>57.9</td> <td>g's</td> <td>39.0</td> <td>g's</td> </tr> </tbody> </table> The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during side impact event.				Front SID-II3		Rear SID-II3		Left Upper Rib Acceleration:	40.9	g's	55.3	g's	Left Lower Rib Acceleration:	34.2	g's	61.2	g's	Lower Spine Acceleration:	60.5	g's	46.3	g's	Thoracic Trauma Index, (TTI):	50.7	g's	53.8	g's	Pelvis Acceleration (PEV):	57.9	g's	39.0	g's
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Table of Contents

<u>Section</u>	<u>Description</u>	<u>Page No.</u>
1	Purpose and Test Procedure	1-1
2	Summary of Side Impact Test	2-1
3	Summary of Test Results	3-1
	Data Sheet 1 - General Vehicle Test Parameter Data	3-2
	Data Sheet 2 - Test Vehicle Summary of Results	3-6
	Data Sheet 3 - Moving Deformable Barrier (MDB) Summary	3-7
	Data Sheet 4 - Post-Test Observations	3-8
4	Occupant and Vehicle Information	4-1
	Data Sheet 5 - SID Instrumentation Data	4-2
	Data Sheet 6 - Vehicle Pre-Test And Post-Test Measurements	4-4
	Data Sheet 7 - SID Longitudinal Clearance Dimensions	4-5
	Data Sheet 8 - SID Lateral Clearance Dimensions	4-6
	Data Sheet 9 - Vehicle Side Measurements	4-7
	Data Sheet 10 - Vehicle Exterior Crush Profiles - All Levels	4-8
	Data Sheet 11 - Vehicle Damage Profile Distances	4-10
	Data Sheet 12 - Exterior Static Crush For Impactor Face	4-11
	Data Sheet 13 - Test Vehicle Accelerometer Locations and Data Summary	4-21
	Data Sheet 14 - MDB Accelerometer Locations and Data Summary	4-24
	Data Sheet 15 - High-Speed Camera Locations and Data	4-25
5	Vehicle Fuel System Integrity	5-1
	Data Sheet 16 - FMVSS 301 Fuel System Integrity Data	5-2
	Data Sheet 17 - FMVSS 301 Rollover Data	5-3
Appendix A	Photographs	A-1
Appendix B	Data Plots	B-1
Appendix C	Sid Configuration and Performance Verification Data	C-1
Appendix D	Test Equipment List and Calibration Information	D-1

Section 1

Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2003 Mercedes-Benz C240 4-door sedan. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001) with the exception of test speed, which was at the NCAP High Speed Lateral Impact level (62.1 km/h).

Section 2

Summary of Side Impact Test

A 2003 Mercedes-Benz C240 4-door Sedan was impacted on the driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.1 km/h (38.6 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on May 5, 2003. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact Hybrid III dummies (SID-H3s) are included in Appendix A.

Two restrained Side Impact Hybrid III Dummies (SID-H3s) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). Both SIDs were certified prior to this test. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID-H3s were instrumented with the following accelerometers:

1. Head (HED) triaxial and redundant accelerometers (X, Y, and Z-directions)
2. Neck (NEK) triaxial force and moment load cells (X, Y, and Z-directions)
3. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
4. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
5. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
6. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)

A summary of the side impact Hybrid III dummy (SID-H3) configuration and verification test data can be found in Appendix C. A total of 72 channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following tables summarize the results of the test:

Injury Criteria	Front SID-H3	Rear SID-H3
TTI (g)	50.7	53.8
PEV (g)	58.0	39.0

Head Injury Criteria (HIC)

Injury Criteria	Front SID-H3	Rear SID-H3
HIC	123	145
t_1 (ms)	31.3	34.4
t_2 (ms)	67.3	67.6
Average Acceleration $t_1 - t_2$ (g)	25.9	39.0

HIC is as defined in FMVSS 208. The maximum time interval t_1 to t_2 is 36 ms.

Neck Injury Criteria

Maximum Values	Front SID-H3	Rear SID-H3
Neck X-axis Force (N)	-482	480
Neck Y-axis Force (N)	-270	-1017
Neck Z-axis Force (N)	-504	-1177
Moment About X-axis (Nm) ¹	-41.7	-37.6
Moment About Y-axis (Nm)	-48.6	28.2
Moment About Z-axis (Nm)	32.7	-15.7

¹ Calculated about the occipital condyle with the following formula: $M_{occ} = M_x + 0.01778F_y$.

Data Acquisition Explanations

The driver's redundant pelvis Y-axis acceleration channel, PEVYR1, recorded questionable data throughout the test. The driver's calculated redundant pelvis Y-axis velocity was also effected.

The vehicle's left middle A-pillar Y-axis acceleration channel, LMAYG1, exceeded full scale at approximately 46 ms and recorded no useful data after that. The vehicle's calculated left middle A-pillar Y-axis velocity and was also affected.

Section 3

Summary of Test Results

Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2003 Mercedes-Benz C240 Sedan
Vehicle Body Style/Color: 4-door/Black VIN: WDBRF61J93A491553
Vehicle NHTSA No.: C30513 Build Date: 01/03
Engine Data: 6 Cylinders; CID; 2.6 Liters; cc
Placement: X Longitudinal; or - Lateral; or - Horizontal
Transmission: 6 Speed; X Manual; - Automatic; - Overdrive
Final Drive: - RWD; X FWD; - Four-Wheel Drive
Odometer Reading: 52 mi
Options: X A/C; X Power steering; X Pwr. brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)* 350 kPa Front; 350 kPa Rear

Recommended Tire Size: 205/55R16

Tires on Test Vehicle: ~~205~~55R16 Manufacturer: Pirella, P6

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; 3rd seat; 5 Total
Type of Front Seats: X Bucket; - Bench; - Split bench
Type of Front Seat Back: - Fixed; X Adjustable with - Lever or X Knob
Vehicle Max. Capacity Loading = 392 kg (A)
No. of Occupants x 68.04 kg. = 340.2 kg (B)
Vehicle Cargo Capacity (A-B) = 51.8 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>405.0</u> kg	Left Rear	=	<u>351.5</u> kg
Right Front	=	<u>392.5</u> kg	Right Rear	=	<u>356.5</u> kg
Total Front	=	<u>797.5</u> kg	Total Rear	=	<u>708</u> kg
Front % of Total Weight	=	<u>53.0</u> %	Rear % of Total Weight	=	<u>47.0</u> %
Total Weight	=	<u>1505.5</u> kg			

* Tire pressure used in test.

Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids = 1505.5 kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle = 51.8 kg (B)
Weight of Instrumented Side Impact Dummies (2 X 84.0 kg) = 168.0 kg (C)
Test Vehicle Target Weight: = 1725.3 kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 2 SIDs + Cargo):

Left Front	=	<u>456.5</u> kg	Left Rear	=	<u>462.5</u> kg
Right Front	=	<u>385.0</u> kg	Right Rear	=	<u>437.0</u> kg
Total Front	=	<u>841.5</u> kg	Total Rear	=	<u>899.5</u> kg
Front % of Total Weight	=	<u>48.3</u> %	Rear % of Total Weight	=	<u>51.7</u> %
Total Weight	=	<u>1741.0</u> kg			

As Tested Weight of Test Vehicle (2 SIDs + Cargo + Equipment & Instrumentation):

Left Front	=	<u>440.8</u> kg	Left Rear	=	<u>432.2</u> kg
Right Front	=	<u>418.6</u> kg	Right Rear	=	<u>423.4</u> kg
Total Front	=	<u>859.4</u> kg	Total Rear	=	<u>855.6</u> kg
Front % of Total Weight	=	<u>50.1</u> %	Rear % of Total Weight	=	<u>49.9</u> %
Total Weight	=	<u>1715.0</u> kg			

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>709</u>	Right Front <u>690</u>	Right Front <u>693</u>
Left Front <u>709</u>	Left Front <u>678</u>	Left Front <u>693</u>
Right Rear <u>670</u>	Right Rear <u>623</u>	Right Rear <u>647</u>
Left Rear <u>674</u>	Left Rear <u>613</u>	Left Rear <u>639</u>

Test Vehicle Wheelbase: 2712 mm

C.G. = 1353 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4355 mm
Left Side = 4355 mm
Centerline = 4525 mm

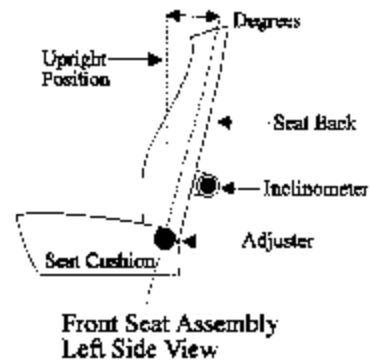
Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Front Seat Cushion Placement: 3 notches forward of center notch when seat was in full down. This position is the mid position for the full seat travel available through all the adjustment heights. (The position was verified as 144 mm measured from the back edge of the outboard seat U-rail to the back edge of the sliding post.)

Total Length of Fore/Aft Adjustment Travel: 215 mm

Total Number of Adjustment Positions or Detents: 27

Front Seat Back Adjustment Position: The back was adjusted to the 23.5 measured at the seat back

Seat Back Torso Angle: 23.5 degrees

Second Position Seat Placement: Fixed

Total Length Of Fore/Aft Adjustment Travel: N/A mm

Seat Back Adjustment Position: N/A, not adjustable

Adjustable Steering Column Position: 20.25° Middle of the geometric range of steering column adjustment (17.5° to 23.0°)

Telescoping Steering Column Position: 28 mm rearward of full in; center of 56 mm range of travel

Window Positions:

Right Front: Open

Right Rear: Open

Left Front: Closed

Left Rear: Closed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Data Sheet 1 (continued)

General Test Vehicle Parameter Data

Amount of Stoddard Solvent In Fuel Tank:

62.0 liters (fuel tank usable capacity)

57.6 liters used in test (92% - 94% of fuel tank usable capacity)

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2712 millimeters

Intended impact point is 416 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 426 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2003/Mercedes-Benz/C240

Body Style: 4-door sedan

VIN: WDBRF61J93A491553

NHTSA No.: C30513

Build Date: 01/03

Test Date: 05/05/03

Vehicle Overall Length = 4525 mm

Overall Width = 1722 mm

Vehicle Test Weight (Pre-Test):

Left Front = 440.8 kg Left Rear = 432.2 kg

Right Front = 418.6 kg Right Rear = 423.4 kg

Total Front = 859.4 kg Total Rear = 855.6 kg

Total Weight = 1715.0 kg

Wheelbase = 2712 mm

Longitudinal C.G. From Center Of Front Axle = 1353 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 10 mm Right of nominal impact ref. line (Lateral)

Actual Impact Point is 15 mm Up from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (270 mm above ground) = 104 mm

2. Level 2 (485 mm above ground) = 225 mm

3. Level 3 (623 mm above ground) = 260 mm

4. Level 4 (860 mm above ground) = 252 mm

5. Level 5 (1375 mm above ground) = 70 mm

Maximum Post-Test Intrusion = 260 mm

Occupants:

Front Passenger

Rear Passenger

Dummy Identification 066

028

Restraints Used Side curtain airbag, torso
airbag, seatbelt

Side curtain airbag, torso
airbag, seatbelt

Instrumentation:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3 Offboard = 8 Total = 11

Data Sheet 3

Moving Deformable Barrier(MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 015A0303-4/ 013C0203

Position Of Impactor (MDB) On Monorail:

Crabbed 27°

MDB Specifications:

Overall Width of Framework Carriage = 1251 mm

Overall Length of MDB (Incl. honeycomb impact face) = 4014 mm

Wheelbase of Framework Carriage = 2591 mm

Track of Framework Carriage (Front & Rear) = 1881 mm

C.G. Location Rearward of Front Axle = 1114 mm

MDB Weight:

Left Front = 388.2 kg Left Rear = 293.8 kg

Right Front = 387.8 kg Right Rear = 291.4 kg

Total Front = 776.0 kg Total Rear = 585.2 kg

Total MDB Weight = 1361.2 kg

Impact Angle (MDB C/L to Target Vehicle C/L) = 90 degrees

Impact Speed = 62.1 km/h

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level = 223 millimeters

2. Row B at Top of Bumper Level = 136 millimeters

3. Row C at Mid Level = 155 millimeters

4. Row D at Top of Stack Level = 160 millimeters

Instrumentation:

Number of MDB Data Channels = 5

Data Sheet 4

Post-Test Observations

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Visible Dummy Contact Points:

	<u>Left Front SID-H3</u>	<u>Left Rear SID-H3</u>
Head:	<u>Side air curtain, head restraint</u>	<u>Side air curtain, side header, head restraint</u>
Upper Torso:	<u>Torso airbag, B-pillar, door panel</u>	<u>Torso airbag, door panel</u>
Lower Torso:	<u>Torso airbag</u>	<u>Torso airbag</u>
Left Knee:	<u>Door panel</u>	<u>Door panel</u>
Right Knee:	<u>None</u>	<u>None</u>

Door Opening:

	<u>Left Side</u>	<u>Right Side</u>
Front:	<u>Latched and jammed shut</u>	<u>Easy</u>
Rear:	<u>Latched and jammed shut</u>	<u>Easy</u>

MDB Distance From Target Impact Point:

Vertical: 15 mm up from target
Horizontal: 10 mm right from target

Arm Rest Locations:

Front: 233 mm below the bottom of the window
Rear: 260 mm below the bottom of the window

Seat Movement:

Front: None
Rear: None

Glazing Damage:

Windshield: None
Window: Driver and passenger side windows shattered

Pillar Separation: No

Sill Separation: No

Other Notable Impact Effects: None

Section 4

Occupant and Vehicle Information

Data Sheet 5

SID-H3 Instrumentation Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

TEST NUMBER: 030505-1

DRIVER DUMMY SERIAL NUMBER: 028

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	5.7 g	@ 20.1 ms	22.8 g	@ 58.5 ms
LATERAL	24.6 g	@ 55.8 ms	4.9 g	@ 181.4 ms
VERTICAL	15.2 g	@ 54.8 ms	10.1 g	@ 60.6 ms
RESULTANT	35.8 g	@ 55.0 ms		
HIC	123 from 31.3 to 67.3 ms			

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	5.4 g	@ 286.2 ms	22.3 g	@ 62.6 ms
LATERAL	25.8 g	@ 52.2 ms	4.8 g	@ 181.0 ms
VERTICAL	14.7 g	@ 54.9 ms	9.9 g	@ 60.6 ms
RESULTANT	35.6 g	@ 55.0 ms		
HIC	122 from 31.3 to 67.3 ms			

NECK FORCE

X-AXIS SHEAR	174.3 N	@ 291.4 ms	482.3 N	@ 55.0 ms
Y-AXIS SHEAR	55.1 N	@ 104.3 ms	269.6 N	@ 26.9 ms
Z-AXIS AXIAL	410.7 N	@ 55.0 ms	504.4 N	@ 53.3 ms

NECK MOMENT

ABOUT X-AXIS	9.6 N-m	@ 113.8 ms	40.7 N-m	@ 37.5 ms
ABOUT Y-AXIS	12.7 N-m	@ 84.2 ms	48.6 N-m	@ 49.4 ms
ABOUT Z-AXIS	32.7 N-m	@ 62.2 ms	8.0 N-m	@ 165.4 ms
OCCIPITAL COND	10.3 N-m	@ 112.7 ms	41.6 N-m	@ 37.3 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	40.9 g	@ 16.9 ms	10.0 g	@ 66.3 ms
LATERAL (R)	41.8 g	@ 16.9 ms	10.6 g	@ 66.9 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	34.2 g	@ 26.9 ms	7.5 g	@ 67.5 ms
LATERAL (R)	35.9 g	@ 26.9 ms	8.6 g	@ 67.5 ms
TTI d (P)	50.7			
TTI d (R)	50.5			

LOWER SPINE ACCELERATION

LATERAL (P)	60.5 g	@ 30.0 ms	12.9 g	@ 73.1 ms
LATERAL (R)	59.2 g	@ 30.6 ms	12.9 g	@ 73.1 ms

PELVIS ACCELERATION

LATERAL (P)	57.9 g	@ 29.4 ms	9.9 g	@ 78.1 ms
LATERAL (R)	---	---	---	---

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

Data Sheet 5 (Continued)

SID-H3 Instrumentation Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

TEST NUMBER: 030505-1

PASSENGER DUMMY SERIAL NUMBER: 066

POSITIVE
DIRECTION

NEGATIVE
DIRECTION

HEAD ACCELERATION

LONGITUDINAL	9.1 g	@ 140.3 ms	10.0 g	@ 41.8 ms
LATERAL	39.9 g	@ 40.9 ms	4.8 g	@ 141.0 ms
VERTICAL	18.0 g	@ 94.6 ms	27.6 g	@ 60.7 ms
RESULTANT	40.9 g	@ 40.9 ms		
HIC	145 from 34.4 to 67.6 ms			

HEAD REDUNDANT ACCELERATION

LONGITUDINAL	9.2 g	@ 140.3 ms	10.0 g	@ 41.9 ms
LATERAL	40.2 g	@ 40.9 ms	4.8 g	@ 142.5 ms
VERTICAL	18.1 g	@ 94.6 ms	27.5 g	@ 60.4 ms
RESULTANT	41.3 g	@ 40.9 ms		
HIC	146 from 34.6 to 67.5 ms			

NECK FORCE

X-AXIS SHEAR	479.9 N	@ 62.1 ms	85.6 N	@ 271.3 ms
Y-AXIS SHEAR	171.8 N	@ 138.0 ms	1017.2 N	@ 60.2 ms
Z-AXIS AXIAL	653.0 N	@ 94.8 ms	1177.1 N	@ 61.3 ms

NECK MOMENT

ABOUT X-AXIS	22.3 N-m	@ 97.0 ms	32.1 N-m	@ 44.1 ms
ABOUT Y-AXIS	28.2 N-m	@ 54.5 ms	7.2 N-m	@ 201.2 ms
ABOUT Z-AXIS	3.3 N-m	@ 246.3 ms	15.7 N-m	@ 163.7 ms
OCCIPITAL COND	17.5 N-m	@ 96.9 ms	37.6 N-m	@ 45.0 ms

LEFT UPPER RIB ACCELERATION

LATERAL (P)	55.3 g	@ 45.6 ms	21.2 g	@ 97.5 ms
LATERAL (R)	54.3 g	@ 45.6 ms	21.9 g	@ 90.1 ms

LEFT LOWER RIB ACCELERATION

LATERAL (P)	61.2 g	@ 45.6 ms	23.9 g	@ 97.5 ms
LATERAL (R)	61.1 g	@ 45.6 ms	26.0 g	@ 97.5 ms
TTI d (P)	53.8			
TTI d (R)	53.8			

LOWER SPINE ACCELERATION

LATERAL (P)	46.3 g	@ 50.6 ms	7.7 g	@ 101.9 ms
LATERAL (R)	46.5 g	@ 50.6 ms	7.6 g	@ 101.9 ms

PELVIS ACCELERATION

LATERAL (P)	39.0 g	@ 44.4 ms	3.6 g	@ 96.9 ms
LATERAL (R)	39.1 g	@ 44.4 ms	3.6 g	@ 96.9 ms

POSITIVE DIRECTION

LONGITUDINAL: FORWARD
LATERAL: RIGHTWARD
VERTICAL: DOWNWARD

NEGATIVE DIRECTION

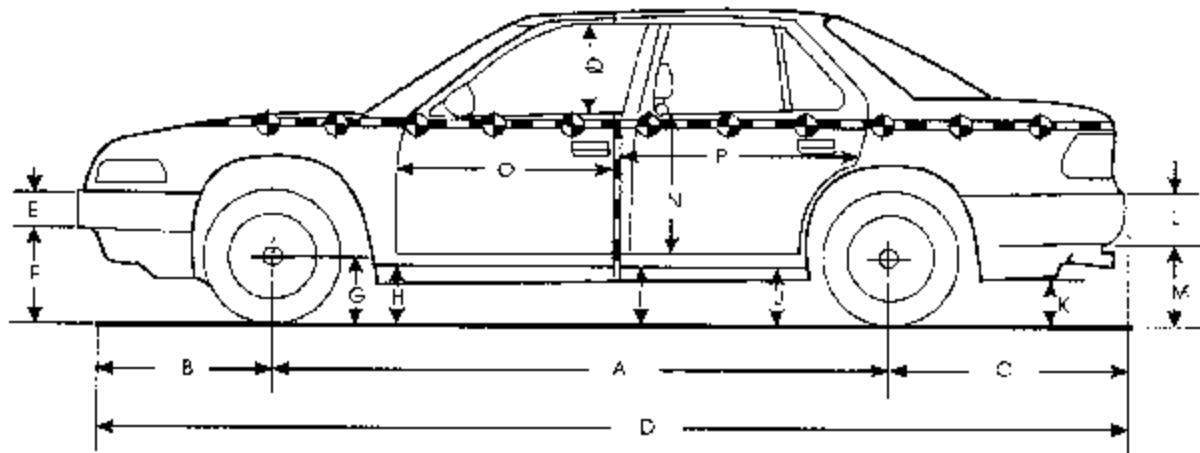
LONGITUDINAL: REARWARD
LATERAL: LEFTWARD
VERTICAL: UPWARD

Data Sheet 6

Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Left Side View

Note: All dimensions are in millimeters with tolerance of ± 3 mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2712	2712	2701	11
B	760	760	750	10
C	1055	1055	1055	0
D	4525	4525	4525	0
E	305	305	305	0
F	212	197	203	-6
G	295	294	296	-2
H	242	222	227	-5
I	260	238	280	-42
J1	201	175	175	0
J2	274	250	245	5
K	264	234	215	19
L	129	129	129	0
M	443	400	382	18
N	636	636	620	16
O	639	639	455	184
P	1454	1454	1330	124
Q	410	410	433	-23
R	4355	4355	4343	12
S	4355	4355	4331	24
T	1293	1293	1170	123

D = Length at centerline
T = Width at B-pillar

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

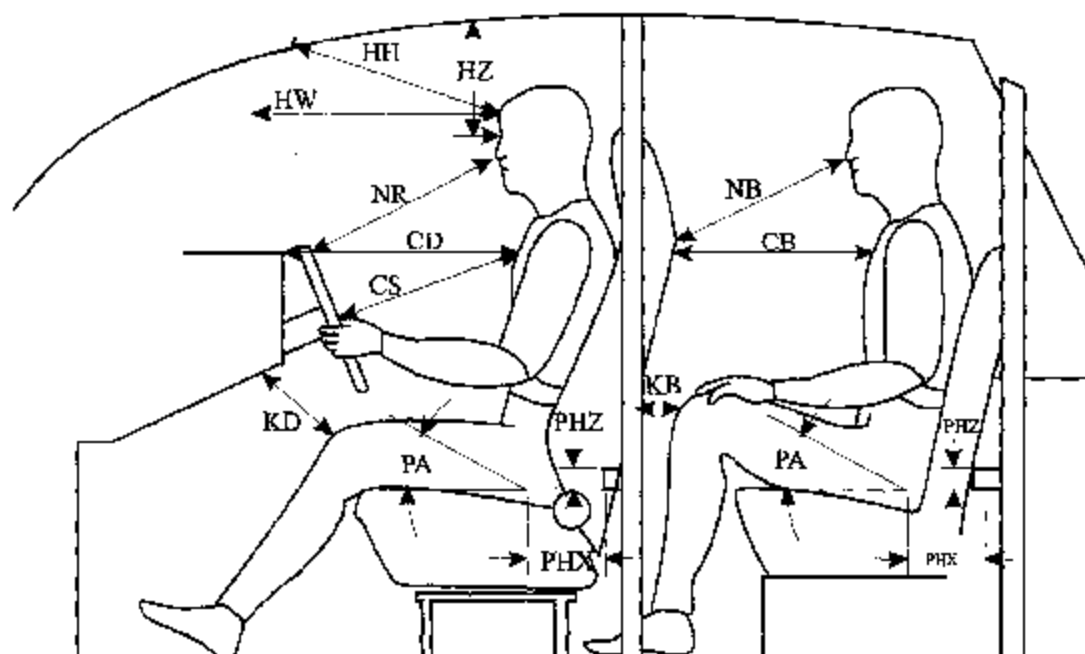
S = Left Side Length

Data Sheet 7

SID-H3 Longitudinal Clearance Dimensions

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Left Side View

Note: All measurements are in millimeters with tolerance of ± 3 mm

Measurement	Driver SID-H3 # 066	Left Rear Pass. SID-H3 # 028
HH	366	N/A
HW	585	N/A
HZ	143	146
NR/NB	427	680
CD/CB	496	557
CS	346	N/A
KDL(KDA°)/KBL(KBA°)	107/(64.9°)	109/(73.0°)
KDR(KDA°)/KBR(KBA°)	75.0/(73.0°)	138/(71.8°)
PA°	23.8°	24.7°
PHX	176	223
PHZ	286	338

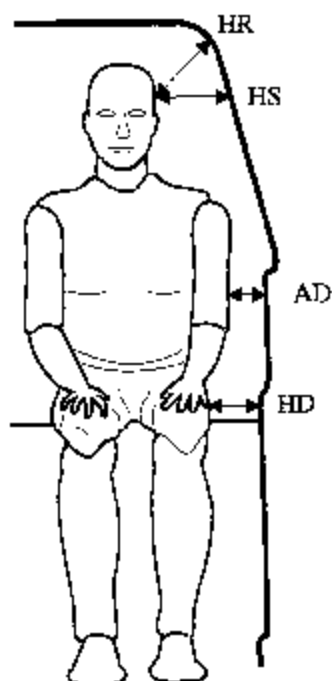
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID-H3 Lateral Clearance Dimensions

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NIITSA No.: C30513



Note: All measurements are in millimeters with tolerance of ± 3 mm

Measurement	Driver SID-H3 # 066	Left Rear Pass. SID-H3 # 028
HR	190	172
HS	320	320
AD*	Lower: 102 Upper: 76	Lower: 116 Upper: 108
HD	128	185

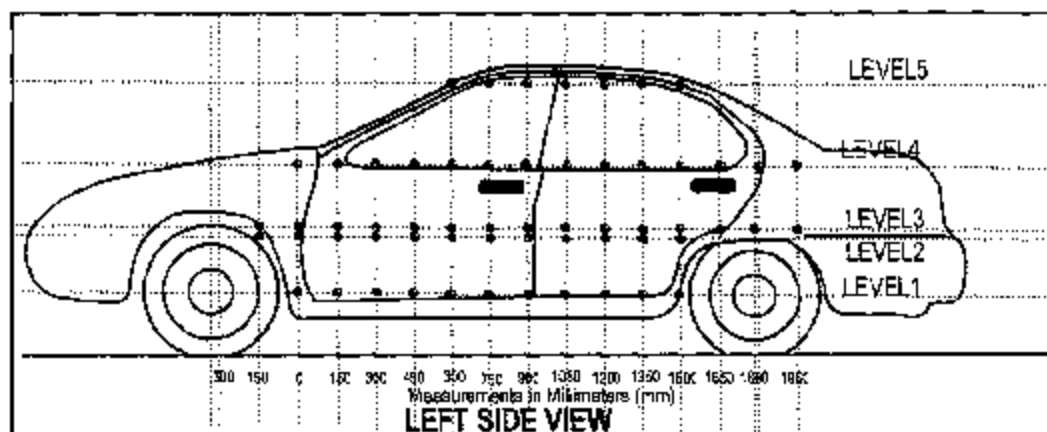
- * Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID arm segment to the closest part of the vehicle side.
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

Measurements Are Taken When The Vehicle Is In The "As Tested" Configuration.

Measurements along the vertical 1050 mm line shown above:

Level 5 @ Window Top	=	<u>1375</u>	mm
Level 4 @ Window Sill	=	<u>860</u>	mm
Level 3 @ Mid Door	=	<u>623</u>	mm
Level 2 @ Occupant H-Point	=	<u>485</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>270</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

		(mm) From Impact Point													
Location	Height	-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	Pre	---	---	---	---	---	---	---	---	680	690	690	695	694	696
	Post	---	---	---	---	---	---	---	---	741	760	771	783	788	795
	Crush	---	---	---	---	---	---	---	---	61	70	81	88	94	99
Level 2 H-Point	Pre	---	---	---	655	---	---	---	---	650	652	656	656	660	657
	Post	---	---	---	710	---	---	---	---	738	810	833	850	863	870
	Crush	---	---	---	55	---	---	---	---	88	158	177	194	203	213
Level 3 Mid-Door	Pre	---	---	---	670	---	---	---	638	650	653	654	653	654	654
	Post	---	---	---	725	---	---	---	705	740	775	823	850	880	895
	Crush	---	---	---	55	---	---	---	67	90	122	169	197	226	241
Level 4 Window Sill	Pre	---	---	---	---	760	737	721	710	700	698	694	684	680	675
	Post	---	---	---	---	807	794	774	760	767	793	800	831	852	872
	Crush	---	---	---	---	47	57	53	50	67	95	106	147	172	197
Level 5 Window Top	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Post	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Location	Height	(mm) From Impact Point															
		900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700			
Level 1 Side Sill	Pre	700	696	700	698	696	696	694	---	---	---	---	---	---	---	---	---
	Post	800	800	802	774	747	722	---	---	---	---	---	---	---	---	---	---
	Crush	100	104	102	76	51	26	---	---	---	---	---	---	---	---	---	---
Level 2 H-Point	Pre	657	658	660	660	661	665	667	659	---	---	---	---	691			
	Post	874	875	875	885	863	837	810	694	---	---	---	---	700			
	Crush	217	217	215	225	202	172	143	35	---	---	---	---	9			
Level 3 Mid-Door	Pre	655	658	658	657	658	665	667	667	649	---	---	667	696			
	Post	915	892	877	890	903	912	878	764	682	---	---	677	700			
	Crush	260	234	219	233	245	247	211	97	33	---	---	10	4			
Level 4 Window Sill	Pre	673	670	679	668	667	670	672	688	686	695	702	718	728			
	Post	873	860	860	875	900	922	896	807	725	721	720	730	739			
	Crush	200	190	181	207	233	252	224	119	39	26	18	12	11			
Level 5 Window Top	Pre	930	928	930	925	926	931	936	952	972	---	---	---	---			
	Post	980	983	989	995	990	988	978	980	1000	---	---	---	---			
	Crush	50	55	59	70	64	57	42	28	28	---	---	---	---			

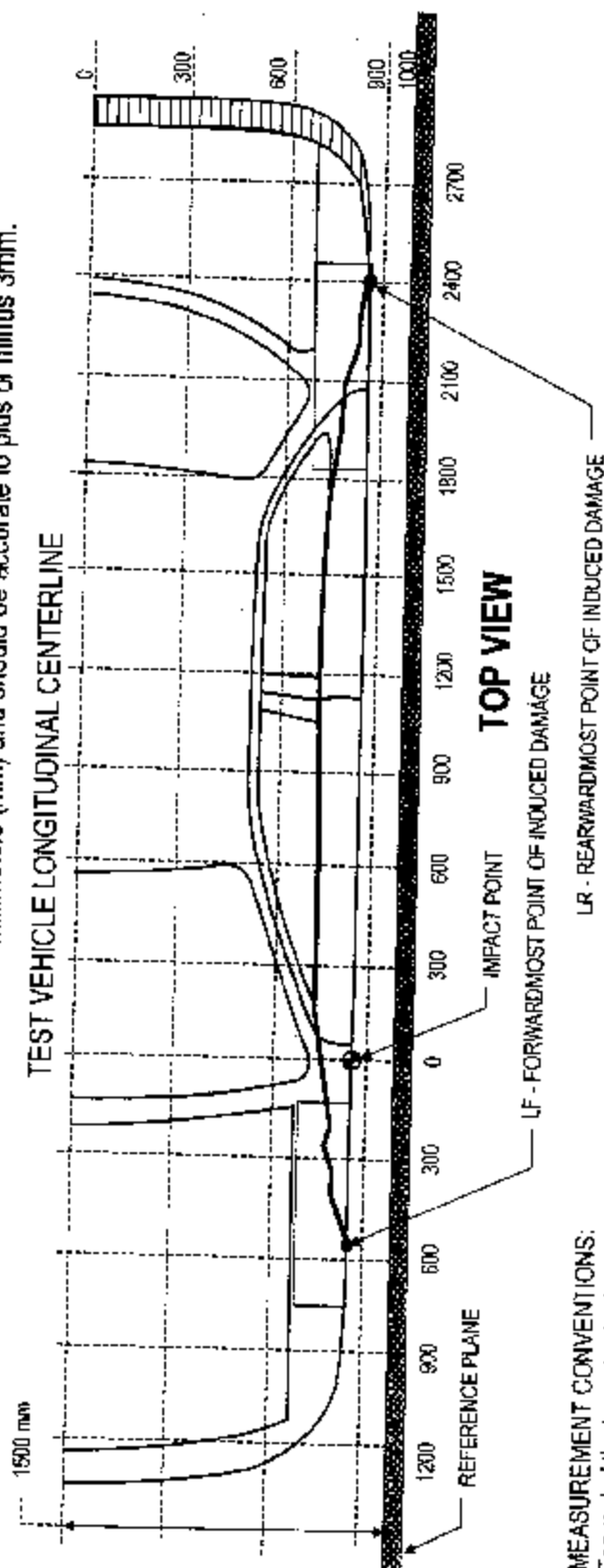
Data Sheet 11

Vehicle Damage Profile Distances

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

NOTE: All measurements are in millimeters (mm) and should be accurate to plus or minus 3mm.



MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (-)

Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Post-Test (mm)	Pre-Test (mm)	Static Crush (mm)
6: LF = -150 mm (Level 3)	705	638	67
5: 300 mm (Level 2)	833	656	177
4: 750 mm (Level 3)	895	654	241
3: 1200 mm (Level 3)	877	658	219
2: 1650 mm (Level 4)	922	670	252
1: LR = 2100 mm (Level 4)	725	686	39

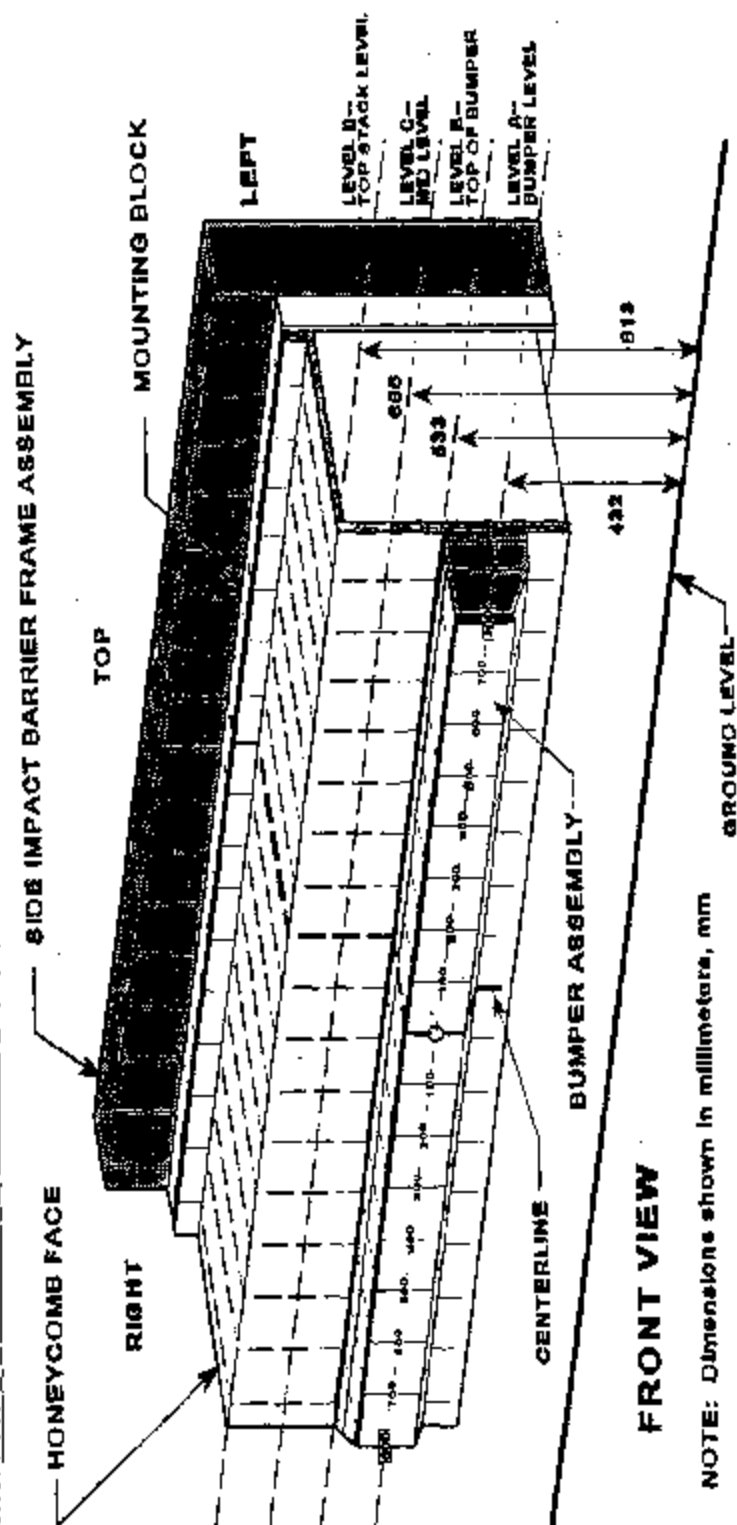
Data Sheet 12

Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

		Distance Right of Center (mm)									Distance Left of Center (mm)								
Location	Height At CL	800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800	
Top Stack Level - Level D	814	-39	-19	-28	-38	-64	-97	-92	-77	-46	-50	-52	-62	-76	-92	-123	-150	-160	
Mid Level Level C	685	-47	-29	-31	-32	-53	-69	-60	-36	-29	-21	-24	-31	-45	-64	-106	-155	-150	
Top Bumper Level - Level B	560	-112	-108	-100	-96	-96	-89	-90	-91	-93	-93	-94	-91	-94	-100	-111	-126	-136	
Mid Bumper Level - Level A	432	-223	-208	-188	-174	-171	-165	-160	-155	-152	-151	-153	-154	-157	-165	-181	-197	-193	

All measurements are in millimeters and have a tolerance of ± 3 mm.

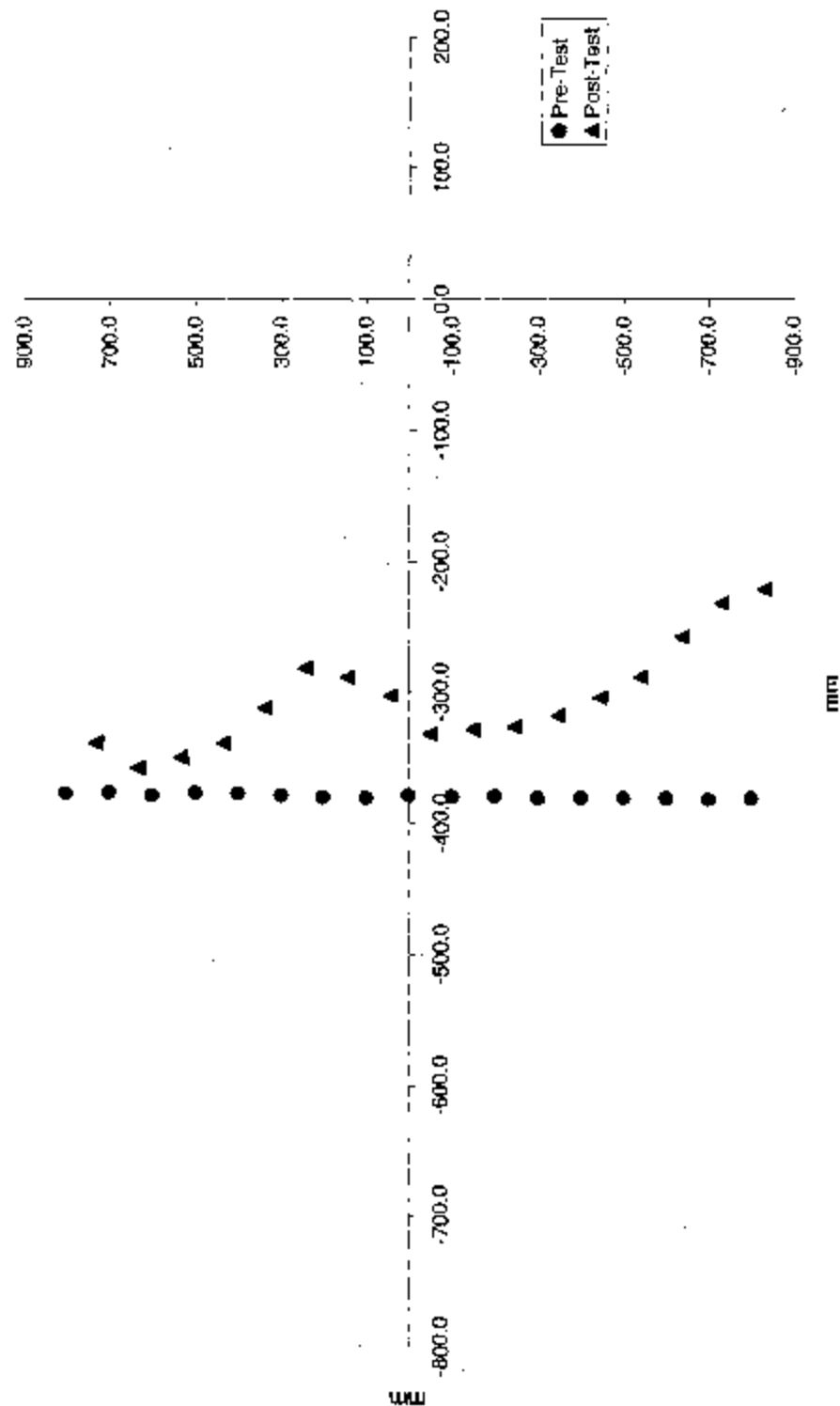
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level D - Deformable Barrier Face Profile 1-17



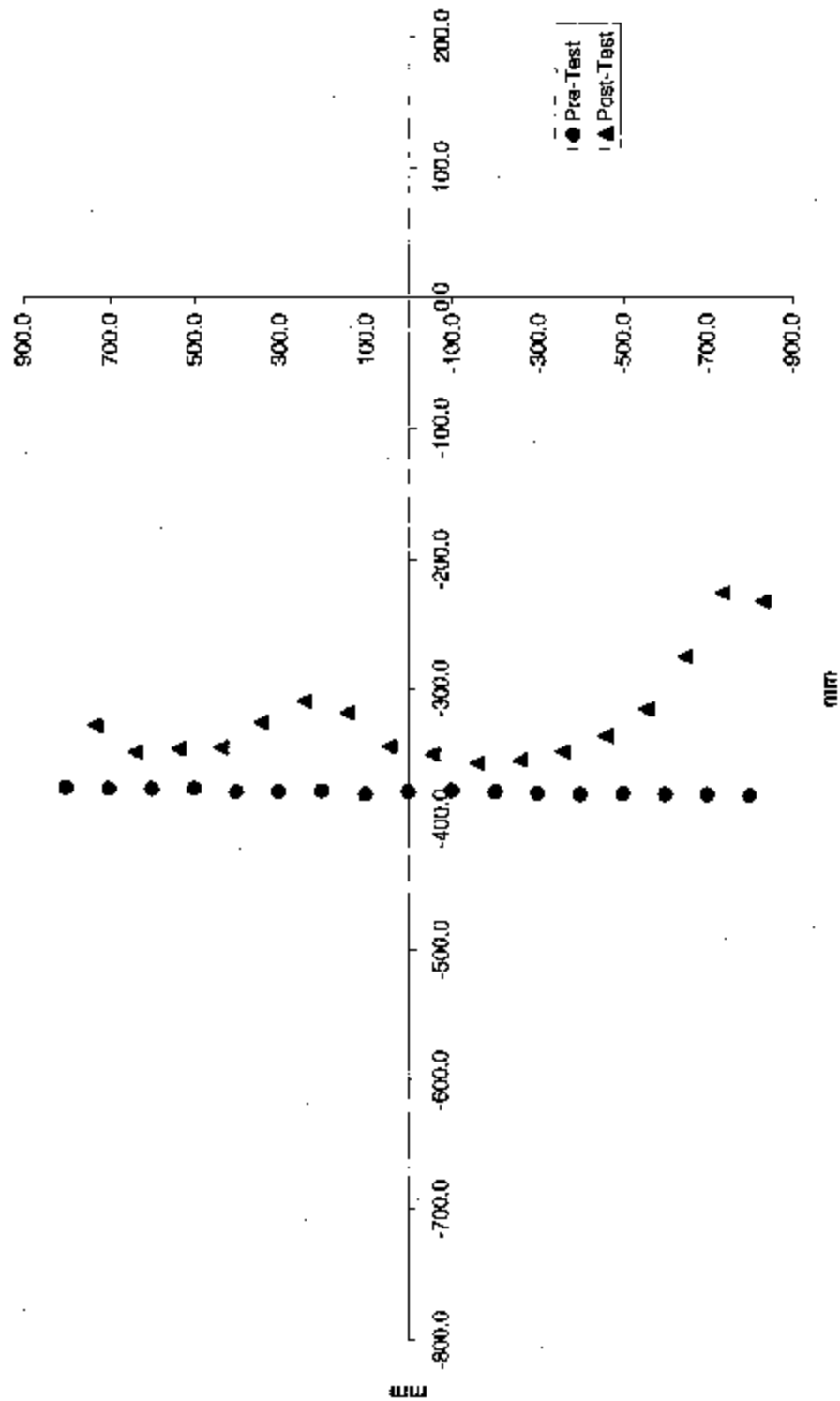
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level C - Deformable Barrier Face Profile 18-34



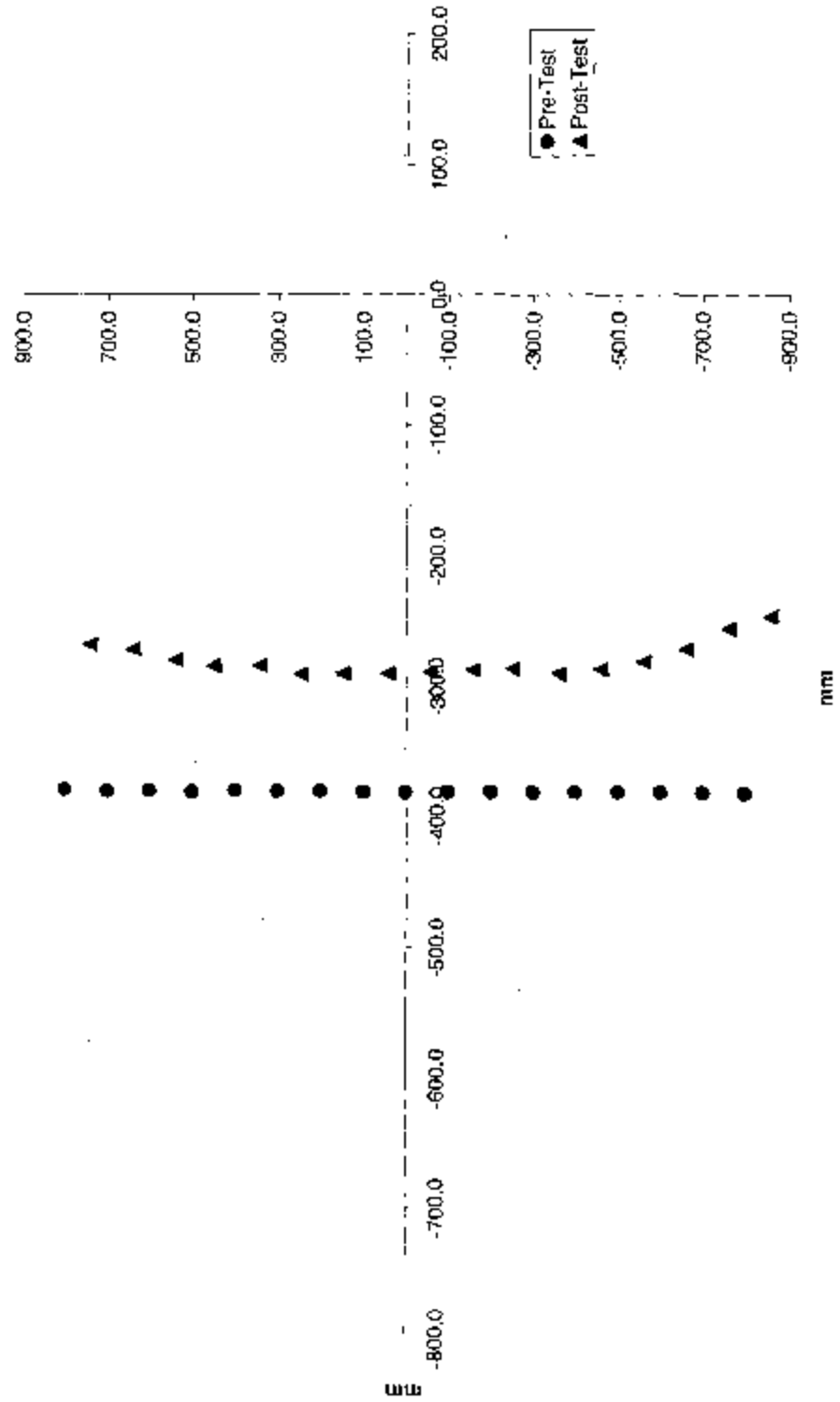
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level B - Deformable Barrier Face Profile 35-51



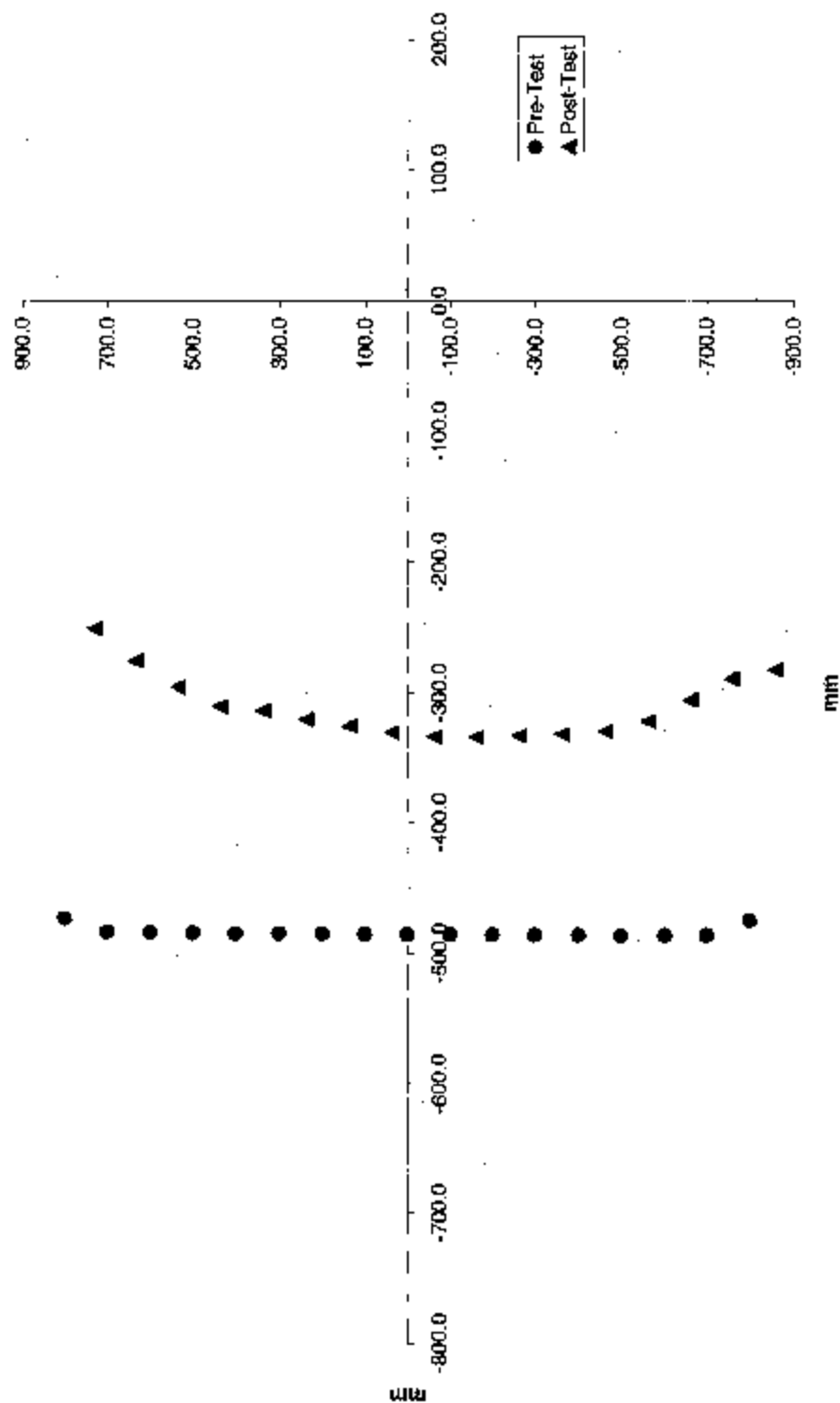
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

Level A - Deformable Barrier Face Profile 52-68



Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

Deformable Barrier Face Profile

NHTSA No.: C30513

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-377	801	-36
2	-376	700	-36
3	-378	600	-37
4	-376	500	-38
5	-377	400	-39
6	-378	299	-39
7	-380	201	-40
8	-380	100	-40
9	-378	0	-41
10	-379	-100	-41
11	-378	-201	-42
12	-380	-300	-43
13	-380	-400	-43
14	-380	-500	-43
15	-381	-600	-44
16	-381	-700	-45
17	-380	-800	-46

Post-Test

Index	Xmm	Ymm	Zmm
1	-338	730	-90
2	-357	633	-95
3	-349	534	-99
4	-339	435	-102
5	-313	339	-105
6	-281	243	-110
7	-288	143	-113
8	-303	43	-110
9	-332	-51	-102
10	-329	-150	-113
11	-327	-247	-101
12	-318	-346	-89
13	-304	-444	-81
14	-288	-542	-72
15	-258	-636	-66
16	-231	-733	-63
17	-221	-832	-62

Difference

Index	Xmm	Ymm	Zmm
1	-39	71	54
2	-19	66	59
3	-28	66	62
4	-38	65	64
5	-64	61	67
6	-97	56	71
7	-92	58	74
8	-77	57	70
9	-46	50	61
10	-50	49	72
11	-52	46	60
12	-62	45	47
13	-76	44	38
14	-92	42	29
15	-123	36	22
16	-150	32	18
17	-160	32	17

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

NHTSA No.: C30513

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan
Deformable Barrier Face Profile Cont'd.

Level C - Mid Level

Pre-Test				Post-Test				Difference			
Index	Xmm	Ymm	Zmm	Index	Xmm	Ymm	Zmm	Index	Xmm	Ymm	Zmm
18	-375	801	-165	18	-328	733	-219	18	-47	68	54
19	-377	701	-165	19	-348	638	-223	19	-29	63	58
20	-377	601	-166	20	-346	538	-226	20	-31	63	60
21	-377	501	-167	21	-345	438	-230	21	-32	62	63
22	-379	401	-167	22	-326	341	-234	22	-53	60	67
23	-379	301	-168	23	-310	242	-235	23	-69	59	67
24	-378	201	-168	24	-319	142	-233	24	-60	59	64
25	-381	101	-169	25	-344	45	-227	25	-36	56	59
26	-379	0	-170	26	-350	-56	-224	26	-29	56	54
27	-378	-100	-170	27	-357	-156	-219	27	-21	56	49
28	-379	-200	-171	28	-355	-258	-215	28	-24	58	44
29	-380	-299	-171	29	-348	-357	-208	29	-31	58	37
30	-381	-399	-172	30	-336	-458	-202	30	-45	59	30
31	-380	-499	-173	31	-316	-556	-197	31	-64	57	24
32	-381	-599	-174	32	-275	-647	-194	32	-106	48	21
33	-381	-700	-175	33	-226	-737	-193	33	-155	37	18
34	-382	-800	-176	34	-232	-831	-181	34	-150	31	5

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

Deformable Barrier Face Profile Cont'd.

NHTSA No.: C30513

Level B - Top of Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
35	-379	800	-290
36	-380	701	-291
37	-380	601	-292
38	-380	501	-293
39	-379	400	-294
40	-380	301	-295
41	-380	200	-295
42	-380	100	-295
43	-381	1	-295
44	-380	-100	-297
45	-380	-201	-297
46	-381	-300	-298
47	-381	-400	-299
48	-381	-500	-299
49	-381	-601	-299
50	-381	-701	-300
51	-382	-800	-301

Post-Test

Index	Xmm	Ymm	Zmm
35	-267	738	-299
36	-271	637	-301
37	-279	537	-308
38	-284	448	-314
39	-283	341	-320
40	-290	243	-323
41	-289	145	-325
42	-289	41	-327
43	-288	-61	-322
44	-287	-159	-316
45	-286	-255	-312
46	-290	-362	-307
47	-287	-462	-305
48	-281	-563	-303
49	-270	-664	-298
50	-255	-762	-295
51	-246	-859	-294

Difference

Index	Xmm	Ymm	Zmm
35	-112	62	9
36	-108	63	10
37	-100	63	16
38	-96	53	21
39	-96	60	27
40	-89	57	28
41	-90	56	30
42	-91	59	32
43	-93	62	27
44	-93	59	19
45	-94	54	15
46	-91	62	9
47	-94	62	6
48	-100	63	4
49	-111	63	-1
50	-126	61	-5
51	-136	59	-6

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NIJTS No.: C30513

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-473	800	-417
53	-484	702	-417
54	-484	602	-417
55	-484	501	-418
56	-485	402	-419
57	-485	302	-420
58	-485	201	-420
59	-486	102	-421
60	-486	2	-423
61	-486	-99	-424
62	-486	-199	-424
63	-486	-298	-424
64	-486	-399	-425
65	-487	-498	-426
66	-487	-599	-426
67	-487	-698	-428
68	-476	-797	-428

Post-Test

Index	Xmm	Ymm	Zmm
52	-251	728	-417
53	-276	633	-427
54	-296	535	-435
55	-311	436	-441
56	-314	337	-442
57	-320	237	-444
58	-326	137	-446
59	-331	37	-448
60	-334	-62	-450
61	-334	-163	-451
62	-333	-263	-450
63	-332	-363	-449
64	-330	-463	-448
65	-322	-562	-445
66	-306	-662	-439
67	-289	-759	-434
68	-283	-858	-431

Difference

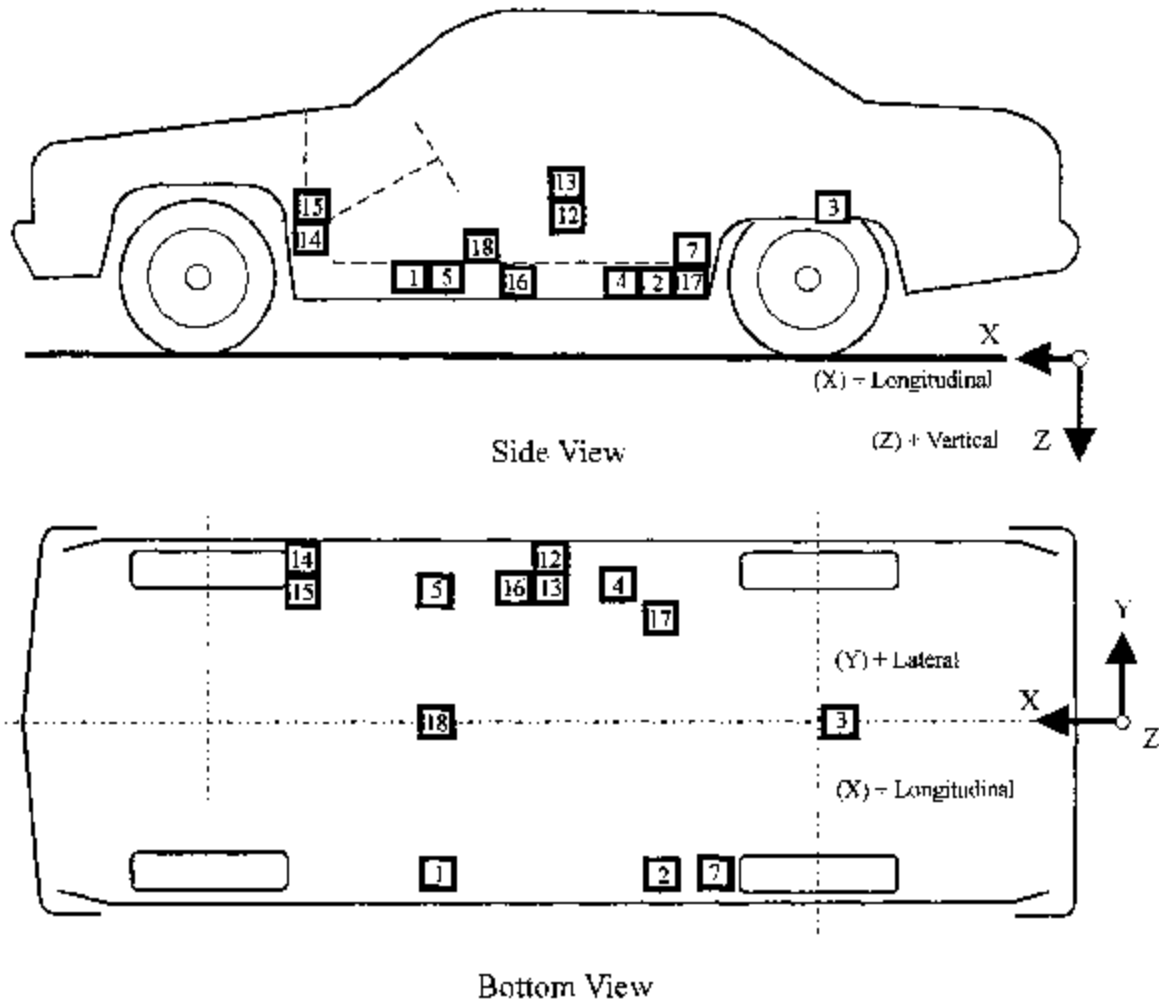
Index	Xmm	Ymm	Zmm
52	-223	71	0
53	-208	69	10
54	-188	66	18
55	-174	65	23
56	-171	65	23
57	-165	65	25
58	-160	65	26
59	-155	65	27
60	-152	64	27
61	-151	64	27
62	-153	64	26
63	-154	64	25
64	-157	64	23
65	-165	64	19
66	-181	62	13
67	-197	60	6
68	-193	61	3

Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



- | | |
|---|--|
| 1-Right Front Side Sill | 10-Left Rear Door Mid Rear (omitted) |
| 2-Right Side Sill at Rear Seat | 11-Left Rear Door Upper Centerline (omitted) |
| 3-Rear Floorpan above Axle | 12-Left Side Lower B-pillar |
| 4-Left Side Sill at Rear Seat | 13-Left Side Middle B-pillar |
| 5-Left Front Side Sill | 14-Left Side Lower A-pillar |
| 6-Left Front Door on Centerline (omitted) | 15-Left Side Middle A-pillar |
| 7-Right Rear Occupant Compartment | 16-Left Side Front Seat Track at H-point |
| 8-Left Front Door Mid Rear (omitted) | 17-Left Rear Seat Track at H-point |
| 9-Left Front Door Upper Centerline(omitted) | 18-Vehicle Center of Gravity |

Data Sheet 13 (Continued)
Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

TEST NUMBER: 030505-1				POSITIVE			NEGATIVE
No. LOCATION	X	Y	Z	DIRECTION			DIRECTION
1 RIGHT SIDE SILL AT FRONT SEAT	2917 mm	675 mm	-285 mm				
LONGITUDINAL				2.1 g	@ 57.1 ms	6.5 g	@ 11.7 ms
LATERAL				24.5 g	@ 7.8 ms	1.7 g	@ 175.4 ms
VERTICAL				6.0 g	@ 9.9 ms	4.1 g	@ 116.2 ms
RESULTANT				25.1 g	@ 7.9 ms		
2 RIGHT SIDE SILL AT REAR SEAT	1957 mm	675 mm	-275 mm				
LONGITUDINAL				2.3 g	@ 57.0 ms	5.8 g	@ 11.7 ms
LATERAL				29.7 g	@ 7.2 ms	2.2 g	@ 88.5 ms
VERTICAL				2.7 g	@ 85.4 ms	6.5 g	@ 15.7 ms
RESULTANT				29.9 g	@ 7.2 ms		
3 REAR FLOORPAN ABOVE AXLE	1139 mm	-15 mm	-648 mm				
LONGITUDINAL				4.6 g	@ 8.2 ms	9.6 g	@ 14.2 ms
LATERAL				29.3 g	@ 6.8 ms	1.4 g	@ 92.6 ms
VERTICAL				11.2 g	@ 13.5 ms	9.5 g	@ 21.4 ms
RESULTANT				29.9 g	@ 7.0 ms		
4 LEFT SIDE SILL AT REAR SEAT	1897 mm	-675 mm	-275 mm				
LATERAL				65.4 g	@ 6.7 ms	14.8 g	@ 14.6 ms
5 LEFT SIDE SILL AT FRONT SEAT	2932 mm	-675 mm	-299 mm				
LATERAL				128.2 g	@ 4.2 ms	37.3 g	@ 9.3 ms
7 RIGHT REAR OCCUPANT COMPARTMENT	1792 mm	0 mm	-261 mm				
LATERAL				28.0 g	@ 6.6 ms	1.5 g	@ 173.3 ms

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NIHTSA No.: C30513

TEST NUMBER: 030505-1				POSITIVE	NEGATIVE
No. LOCATION	X	Y	Z	DIRECTION	DIRECTION
12 LEFT LOWER B-POST LATERAL	2102 mm	-678 mm	-635 mm	178.8 g @ 4.2 ms	31.2 g @ 12.8 ms
13 LEFT MIDDLE B-POST LATERAL	2051 mm	-678 mm	-877 mm	122.8 g @ 5.0 ms	27.3 g @ 23.9 ms
14 LEFT LOWER A-POST LATERAL	3054 mm	-754 mm	-389 mm	91.8 g @ 3.2 ms	18.4 g @ 18.1 ms
15 LEFT MIDDLE A-POST LATERAL	3077 mm	-754 mm	-710 mm	---	---
16 LEFT FRONT SEAT TRACK LATERAL	2319 mm	-560 mm	-275 mm	60.6 g @ 9.0 ms	7.0 g @ 49.7 ms
17 LEFT REAR SEAT TRACK LATERAL	1487 mm	-724 mm	-500 mm	102.2 g @ 4.5 ms	41.6 g @ 8.4 ms
18 VEHICLE CENTER OF GRAVITY	2599 mm	0 mm	-465 mm		
LONGITUDINAL				6.8 g @ 16.8 ms	8.4 g @ 28.8 ms
LATERAL				35.0 g @ 8.2 ms	7.4 g @ 53.4 ms
VERTICAL				12.6 g @ 20.0 ms	23.2 g @ 9.0 ms
RESULTANT				41.3 g @ 8.5 ms	

REFERENCE: X: + FORWARD FROM REAR BUMPER
Y: + RIGHTWARD FROM VEHICLE CENTERLINE
Z: + DOWNWARD FROM GROUND LEVEL

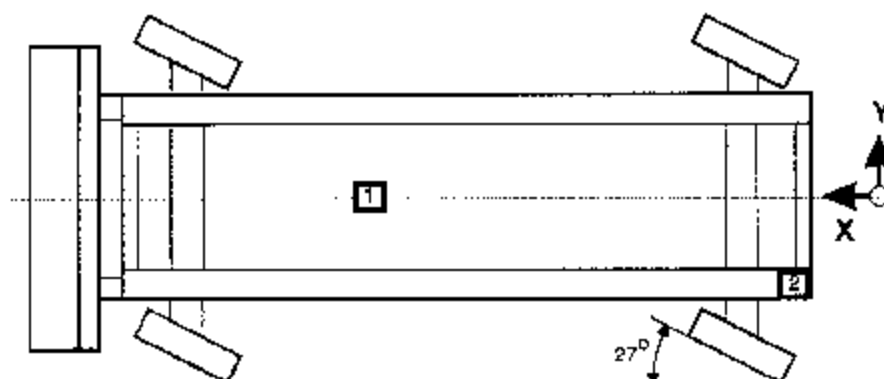
For acceleration data sign convention, see Report Sign Convention in Appendix D.
* See DATA ACQUISITION EXPLANATIONS on page 2-3

Data Sheet 14

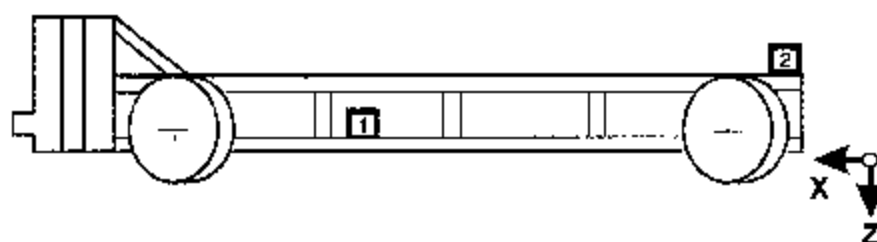
MDB Accelerometer Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



TOP VIEW



SIDE VIEW

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1855	0	-520				
	Longitudinal X				2.3	186.2	-23.6	34.5
	Lateral Y				4.9	19.2	-12.5	22.6
	Vertical Z				8.3	15.1	-6.6	25.0
	Resultant R				25.2	22.7		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.7	116.2	-25.4	33.8
	Lateral Y				3.4	28.6	-3.5	141.6

*Reference: X = Rear Bumper (- Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

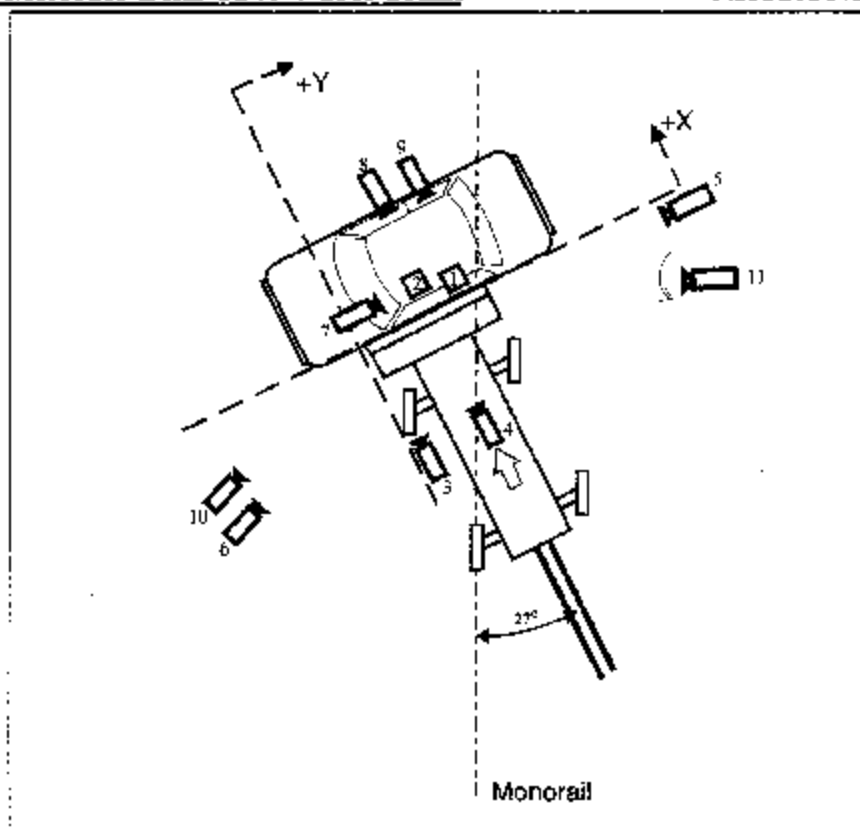
All measurements accurate to within ± 3 mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513



Camera Number	Location	Location, mm			Lens		Speed (fps)
		X	Y	Z	(mm)	(deg)	
1	Overhead wide	250	2150	-5750	8.5	-77.5	N/A ¹
2	Overhead tight	370	1800	-5750	17	-85.5	1012
3	Onboard MDB left side	-1750	-40	-720	13	-0.5	1022
4	Onboard MDB center	-2480	830	-1353	25	-5.2	1010
5	Right side of MDB	50	11650	-1180	13	-1	1012
6	Left side of MDB	-2300	-5740	-1100	13	-2.9	1022
7	Onboard vehicle front	505	-180	-1180	8	-8.4	325
8	Onboard side front door	1670	910	-1020	8	-6	N/A ²
9	Onboard side rear door	1600	1700	-1500	8	-0.8	N/A ¹
10	Digital overall event	-2350	-5730	-1210	13	-4.3	1000
11	Real-time Panning-Video	N/A	N/A	N/A	Zoom	N/A	24

+X: Forward (referenced to MDB) from impact point

+Y: Rightward (referenced to MDB) from impact point

+Z: Downward from ground level

¹ No LEDs

² Camera did not run.

Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C30513

Test Date: 05/19/03

Vehicle Year/Make/Model/Body Style: 2003 Mercedes-Benz C240 4-door Sedan

Test Vehicle Impact Type :

- ☐ Frontal (48.28 km/h)
☐ Oblique (48.28 km/h) with ____° barrier
face first contacting the (driver/passenger) side
☐ Rear Moving Barrier (48.28 km/h)
☐ Lateral Moving Barrier (32.19 km/h)
☒ Side Impact Moving Deformable Barrier
(62.0 km/h) contacting the driver's side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

N/A

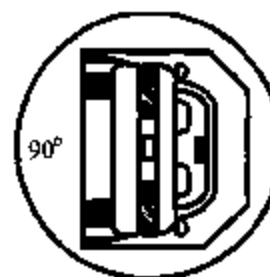
Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

0 - 90 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>1</u>	minutes	<u>30</u>	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time	<u>5</u>	minutes	<u>0</u>	seconds
Total	<u>6</u>	minutes	<u>30</u>	seconds
Next whole minute interval	<u>7</u>	minutes		

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

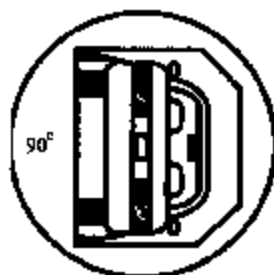
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

90 - 180 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

Total 6 minutes 30 seconds

Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

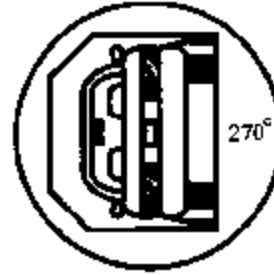
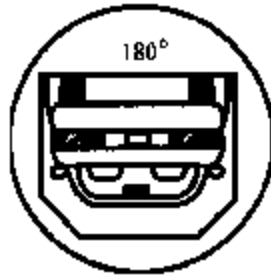
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds
(Spec. Range = 1 to 3 minutes)
FMVSS 301 Position Hold Time + 5 minutes 0 seconds
Total 6 minutes 30 seconds
Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

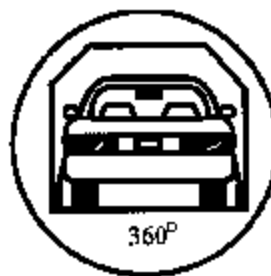
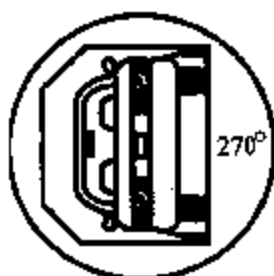
Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2003 Mercedes-Benz C240 4-door Sedan

NHTSA No.: C30513

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time 1 minutes 30 seconds

(Spec. Range = 1 to 3 minutes)

FMVSS 301 Position Hold Time + 5 minutes 0 seconds

Total 6 minutes 30 seconds

Next whole minute interval 7 minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Appendix A

Photographs

List of Photographs

<u>Figure</u>	<u>Description</u>	<u>Page</u>
Figure A-1	Pre-Test Front View of Test Vehicle	A-4
Figure A-2	Post-Test Front View of Test Vehicle	A-5
Figure A-3	Pre-Test Impacted Side View of Test Vehicle	A-6
Figure A-4	Post-Test Impacted Side View of Test Vehicle	A-7
Figure A-5	Pre-Test Rear View of Test Vehicle	A-8
Figure A-6	Post-Test Rear View of Test Vehicle	A-9
Figure A-7	Pre-Test Frontal View of Impactor Face	A-10
Figure A-8	Post-Test Frontal View of Impactor Face	A-11
Figure A-9	Pre-Test Left Side View of Impactor Face	A-12
Figure A-10	Post-Test Left Side View of Impactor Face	A-13
Figure A-11	Pre-Test Right Side View of Impactor Face	A-14
Figure A-12	Post-Test Right Side View of Impactor Face	A-15
Figure A-13	Pre-Test Top View of Impactor Face	A-16
Figure A-14	Post-Test Top View of Impactor Face	A-17
Figure A-15	Pre-Test View of MDB Showing Contact Switches in Place	A-18
Figure A-16	Post-Test Overhead View of MDB and Vehicle	A-19
Figure A-17	Pre-Test Right Occupant Compartment View of Front SID	A-20
Figure A-18	Post-Test Right Occupant Compartment View of Front SID	A-21
Figure A-19	Pre-Test Right Occupant Compartment View of Rear SID	A-22
Figure A-20	Post-Test Right Occupant Compartment View of Rear SID	A-23
Figure A-21	Pre-Test Left View of Front SID	A-24
Figure A-22	Post-Test Left View of Front SID	A-25
Figure A-23	Pre-Test Left View of Front SID and Belt Position	A-26
Figure A-24	Pre-Test View of Front SID and Door Clearance	A-27
Figure A-25	Post-Test View of Front SID and Door Clearance	A-28
Figure A-26	Pre-Test Left View of Rear SID	A-29
Figure A-27	Post-Test Left View of Rear SID	A-30
Figure A-28	Pre-Test Left View of Rear SID and Belt Position	A-31

List of Photographs, Cont'd.

<u>Figure</u>	<u>Description</u>	<u>Page</u>
Figure A-29	Pre-Test View of Rear SID and Door Clearance	A-32
Figure A-30	Post-Test View of Rear SID and Door Clearance	A-33
Figure A-31	Pre-Test Interior of Front Door	A-34
Figure A-32	Post-Test Interior of Front Door Showing SID Impact Locations	A-35
Figure A-33	Post-Test Front SID Contact - View 1	A-36
Figure A-34	Post-Test Front SID Contact - View 2	A-37
Figure A-35	Post-Test Front SID Contact - View 3	A-38
Figure A-36	Post-Test Front SID Contact - View 4	A-39
Figure A-37	Pre-Test Interior of Rear Panel	A-40
Figure A-38	Post-Test Interior of Rear Panel Showing SID Impact Locations	A-41
Figure A-39	Post-Test Rear SID Contact - View 1	A-42
Figure A-40	Post-Test Rear SID Contact - View 2	A-43
Figure A-41	Post-Test Rear SID Contact - View 3	A-44
Figure A-42	Post-Test Rear SID Contact - View 4	A-45
Figure A-43	Pre-Test Left Side View of MDB With Impactor Face in Position	A-46
Figure A-44	Pre-Test Primary Impact Point View	A-47
Figure A-45	Post-Test Primary Impact Point View	A-48
Figure A-46	Pre-Test Right Side View of MDB With Impactor Face in Position	A-49
Figure A-47	Pre-Test Secondary Impact Point View	A-50
Figure A-48	Post-Test Secondary Impact Point View	A-51
Figure A-49	Pre-Test Vehicle Certification Label View	A-52
Figure A-50	Pre-Test Vehicle Recommended Tire Pressure Label View	A-53
Figure A-51	Impact Event	A-54
Figure A-52	Pre-Test Fuel Cap	A-55
Figure A-53	Post-Test Fuel Cap	A-56
Figure A-54	FMVSS 301 Rollover View at 90°	A-57
Figure A-55	FMVSS 301 Rollover View at 180°	A-58
Figure A-56	FMVSS 301 Rollover View at 270°	A-59
Figure A-57	FMVSS 301 Rollover View at 360°	A-60

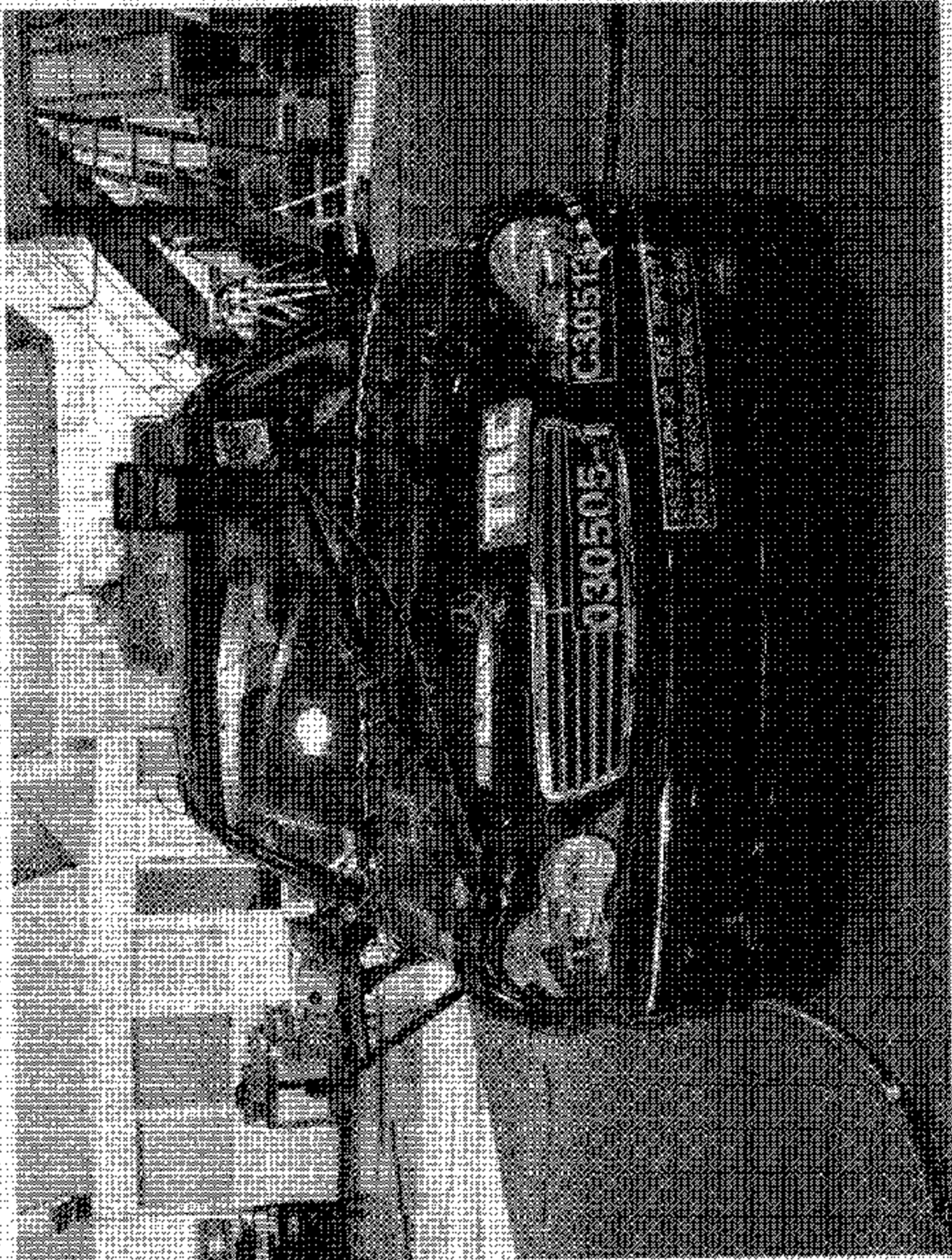


Figure A-1 Pre-Test Front View of Test Vehicle

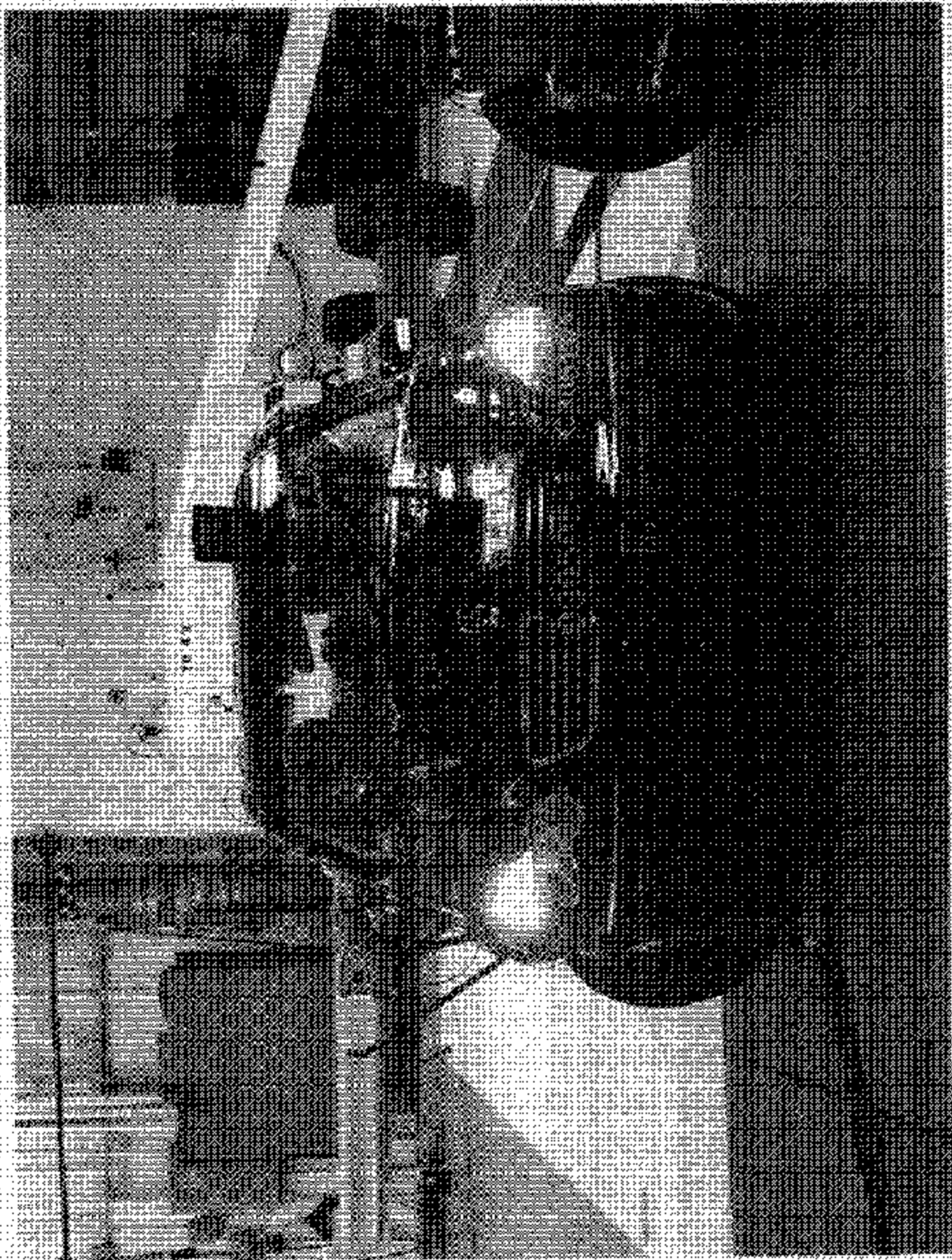


Figure A-2 Post-Test Front View of Test Vehicle

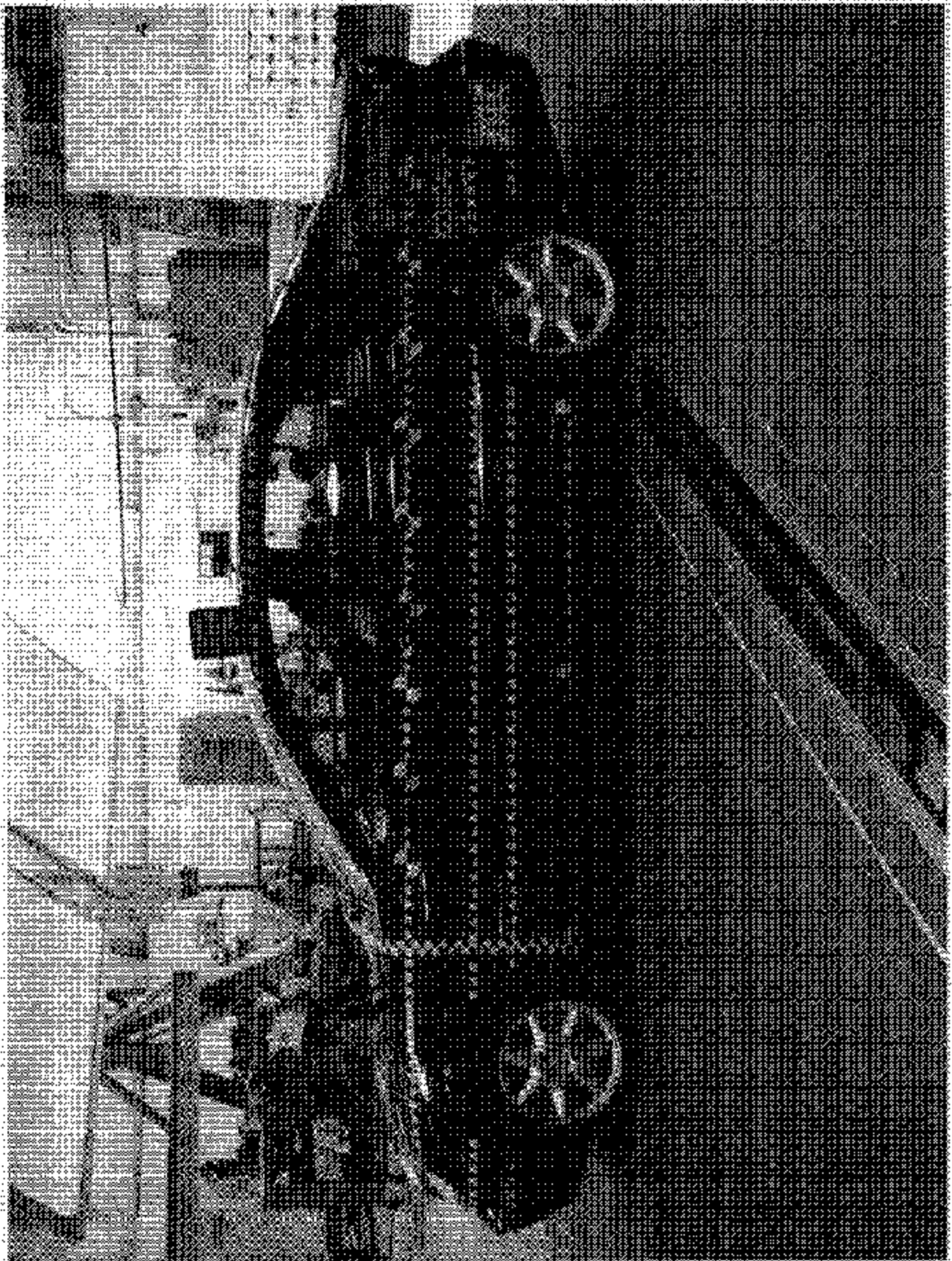


Figure A-3 Pre-Test Impacted Side View of Test Vehicle

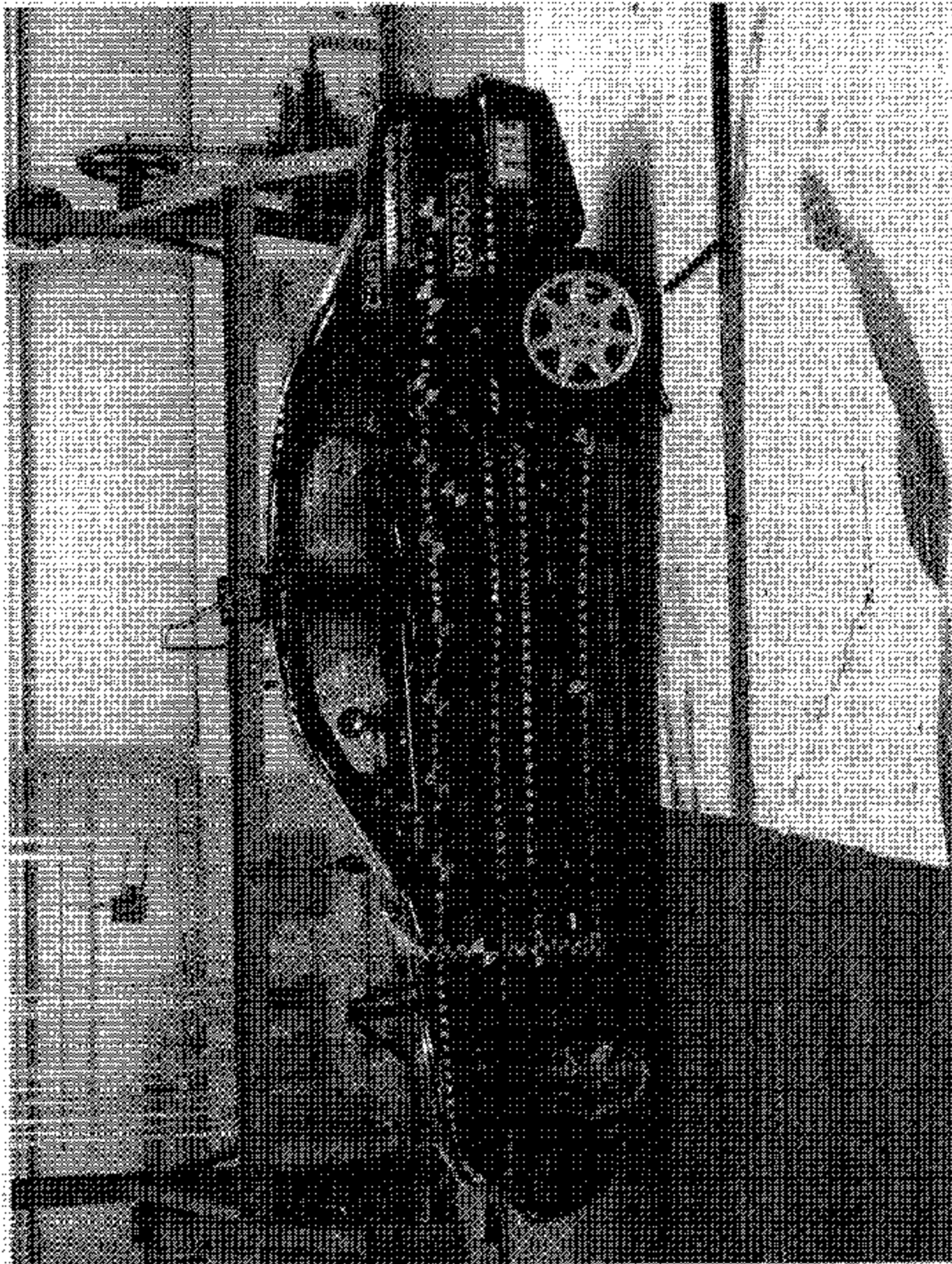


Figure A-4 Post-Test Impacted Side View of Test Vehicle

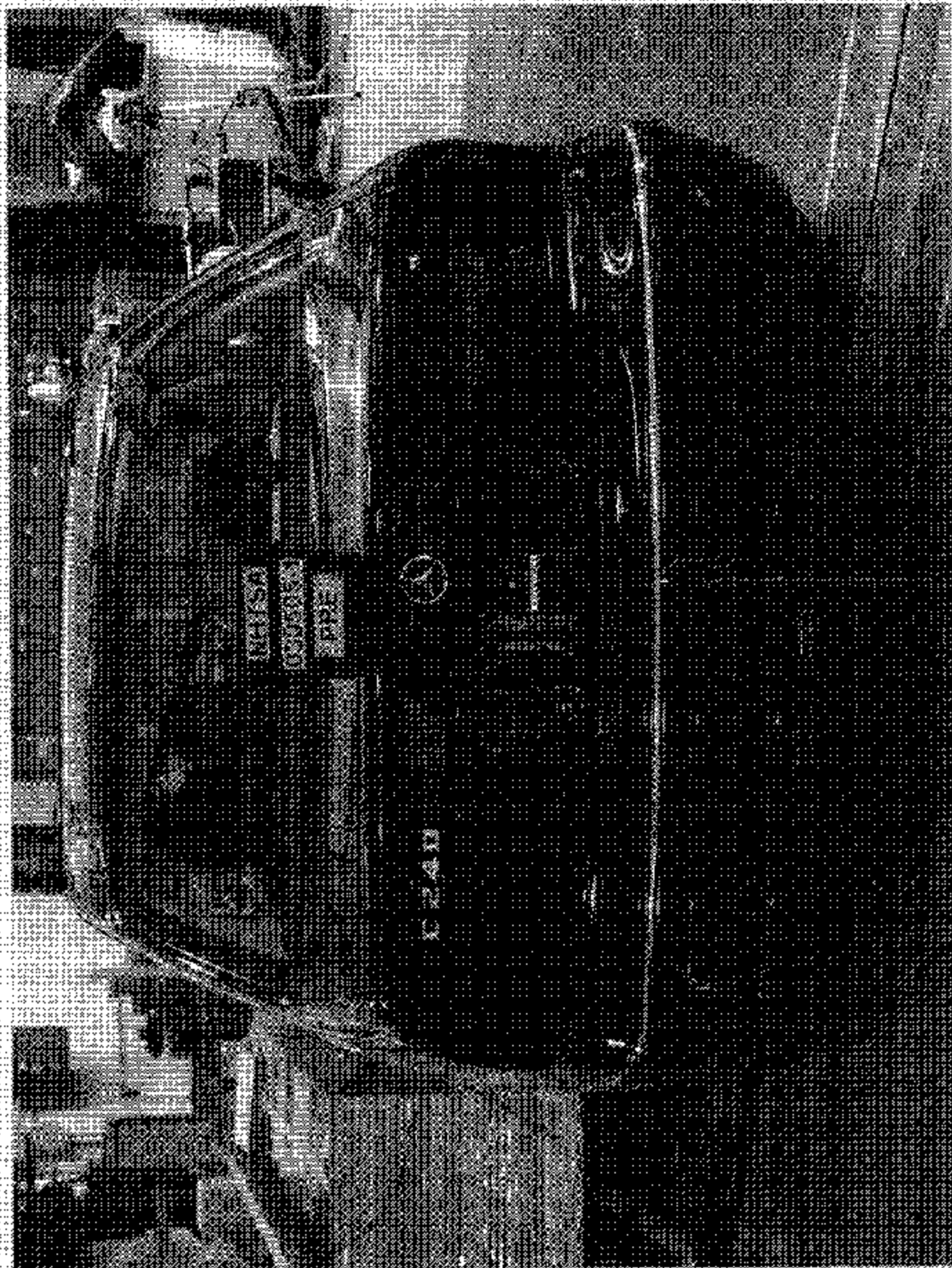


Figure A-5 Pre-Test Rear View of Test Vehicle

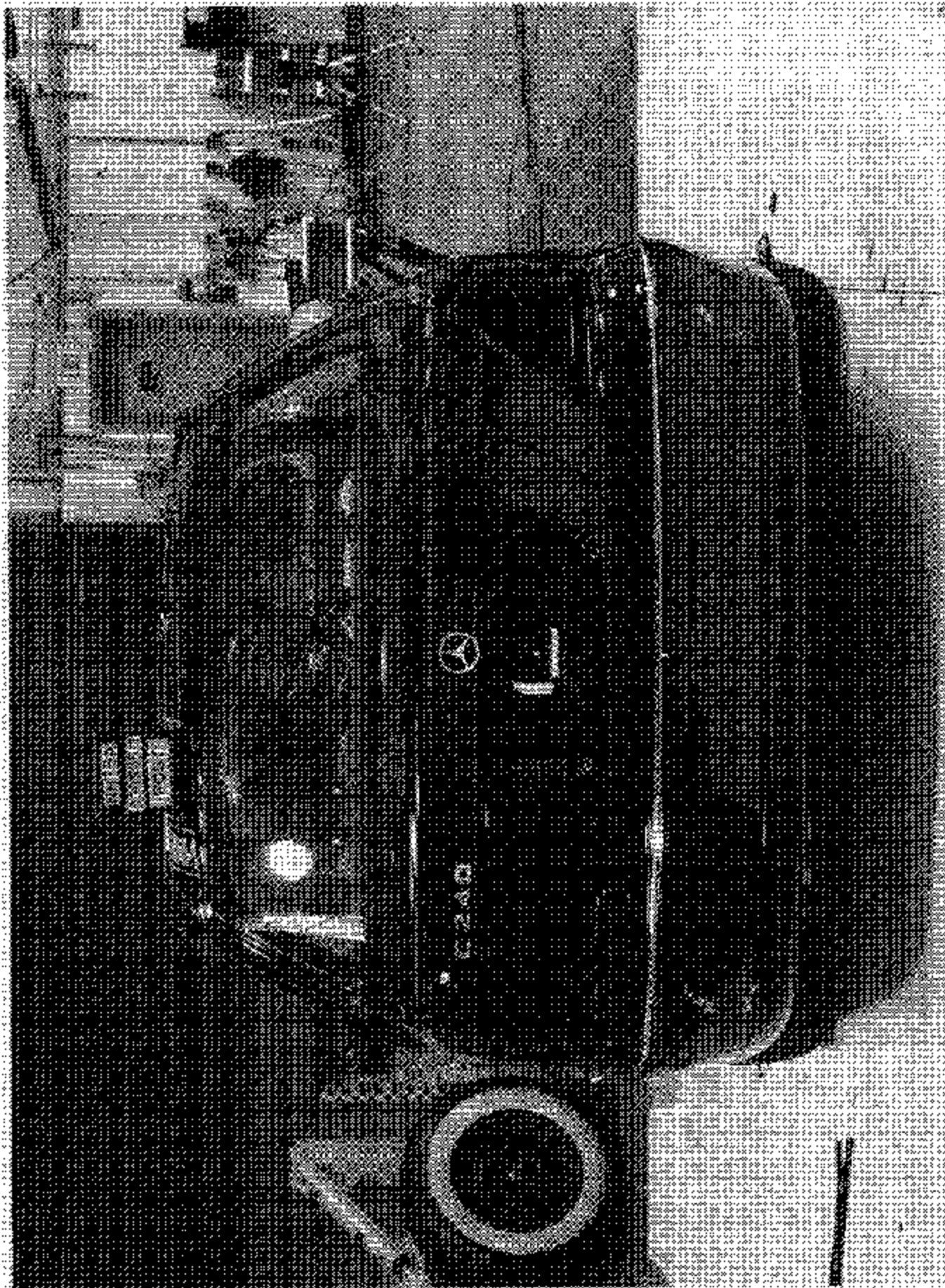


Figure A-6 Post-Test Rear View of Test Vehicle

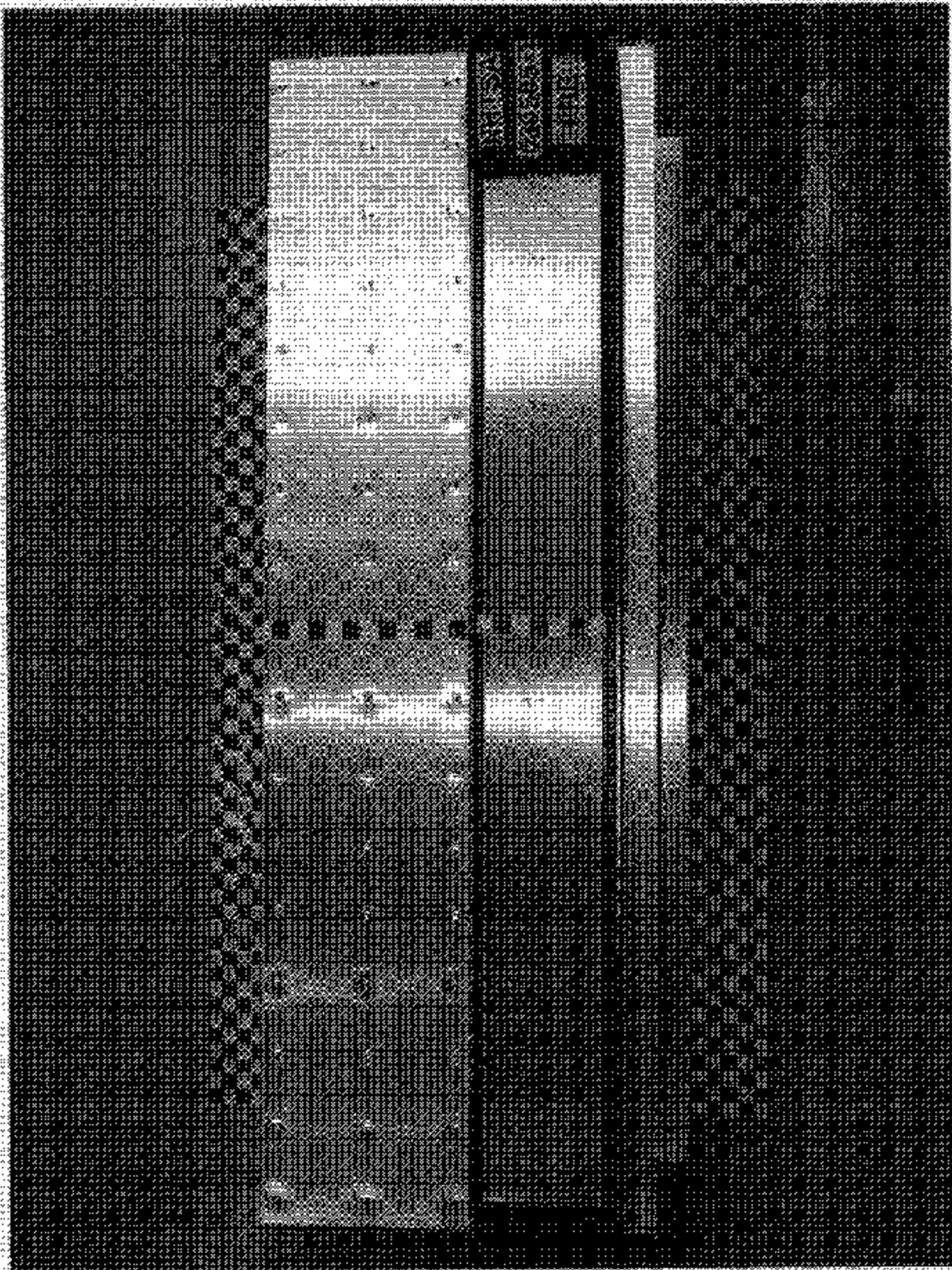


Figure A-7 Pre-Test Frontal View of Impactor Face

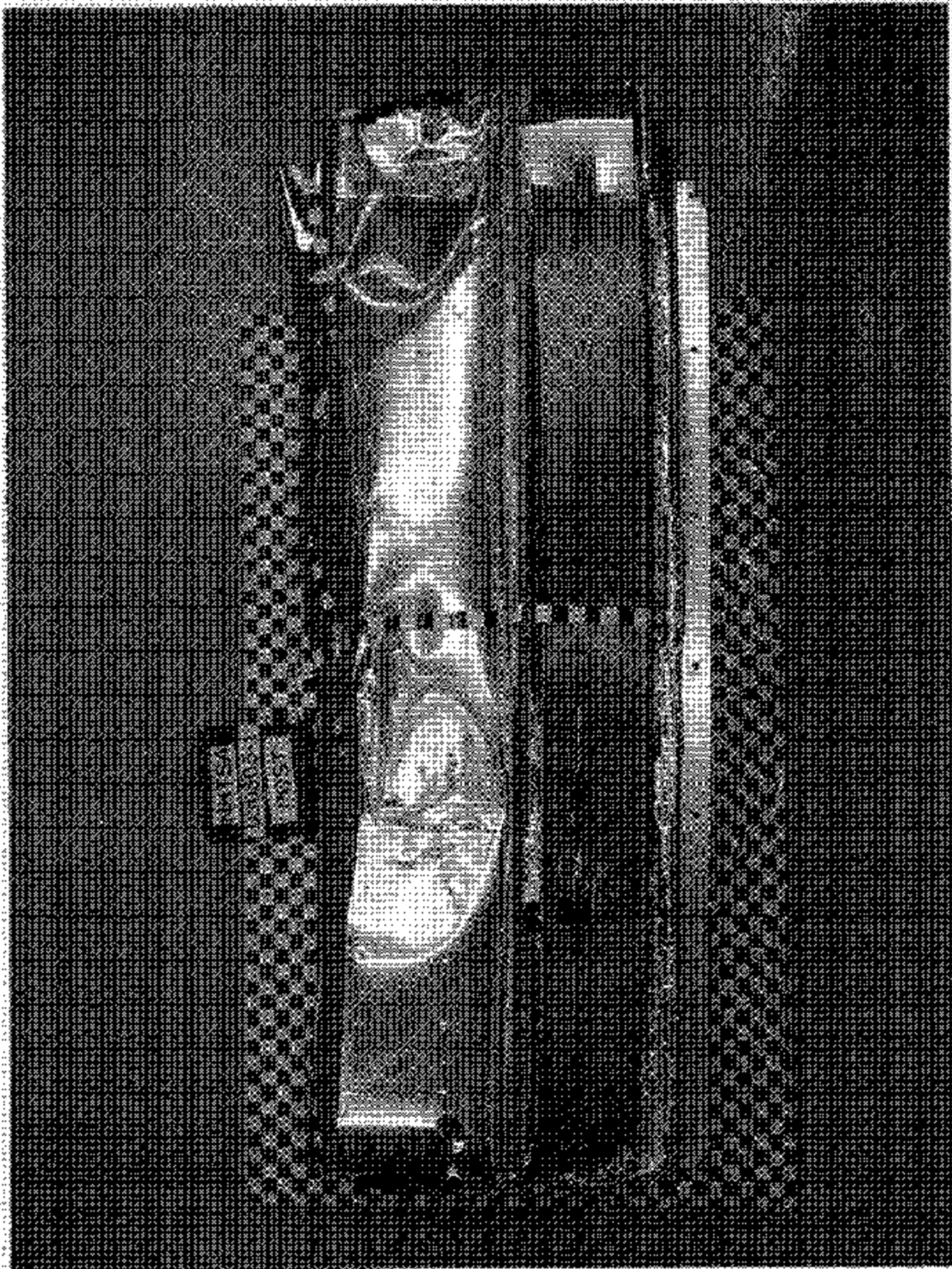


Figure A-8 Post-Test Frontal View of Impactor Face

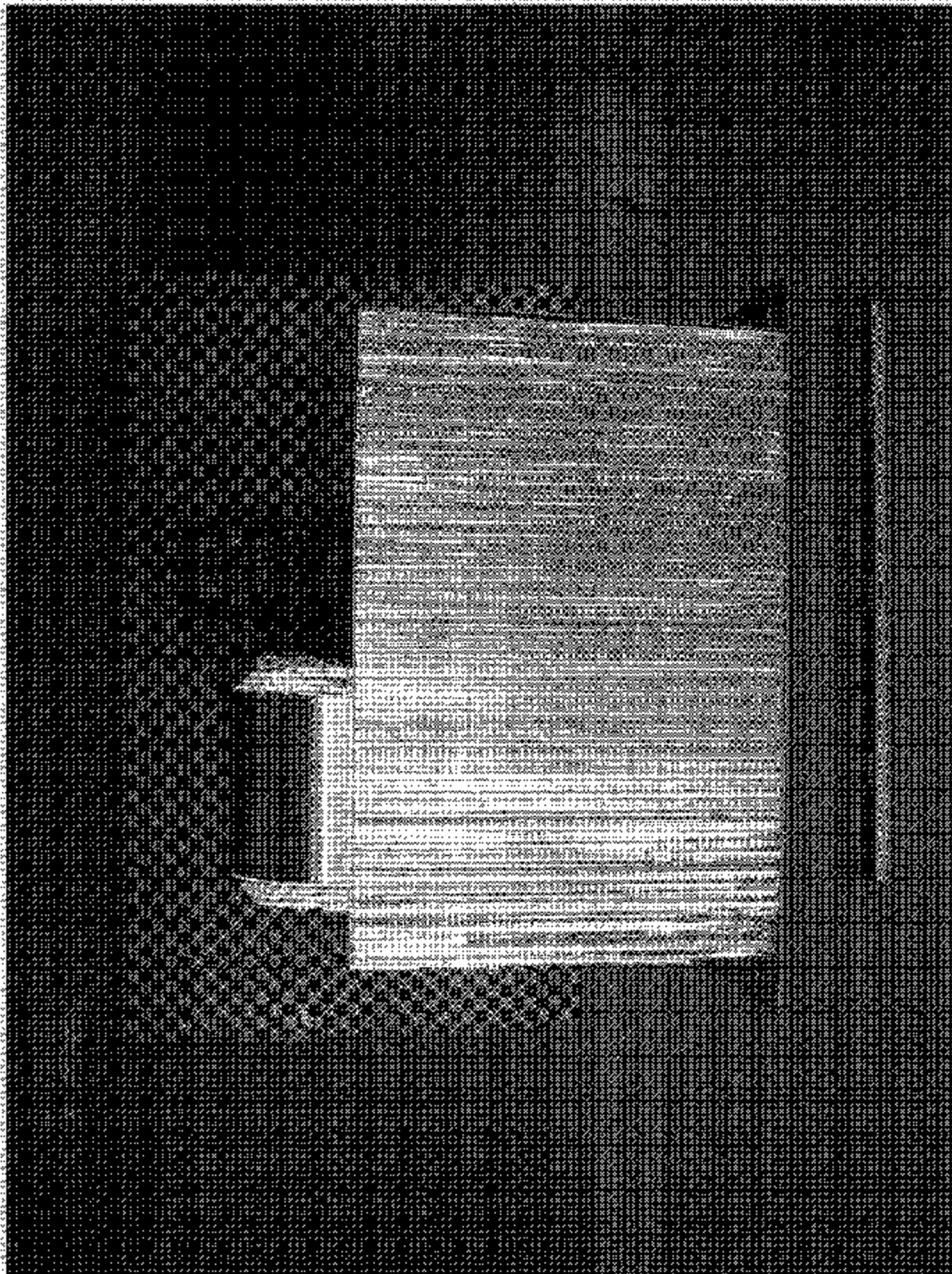


Figure A-9 Pre-Test Left Side View of Impactor Face

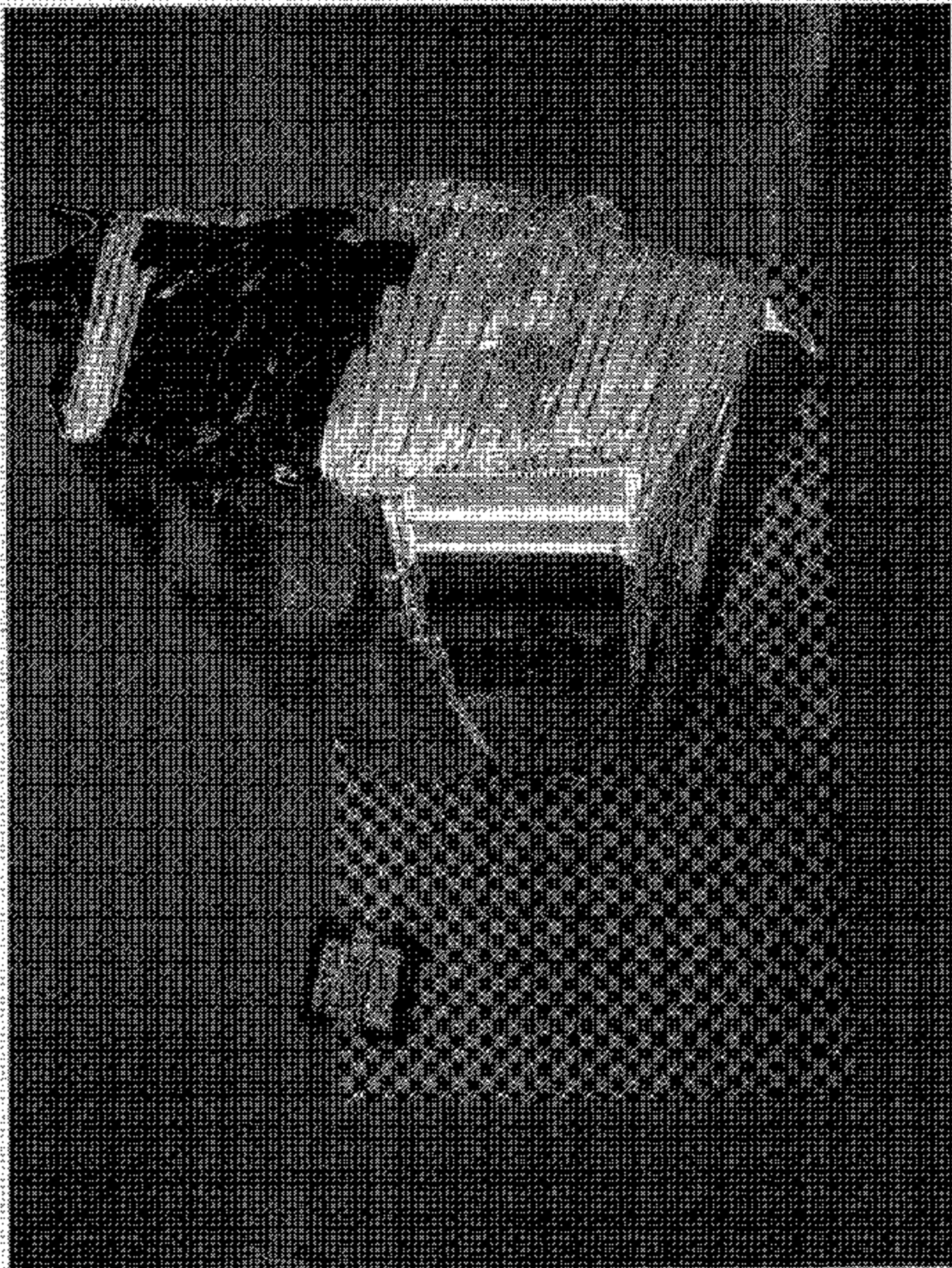


Figure A-10 Post-Test Left Side View of Impactor Face

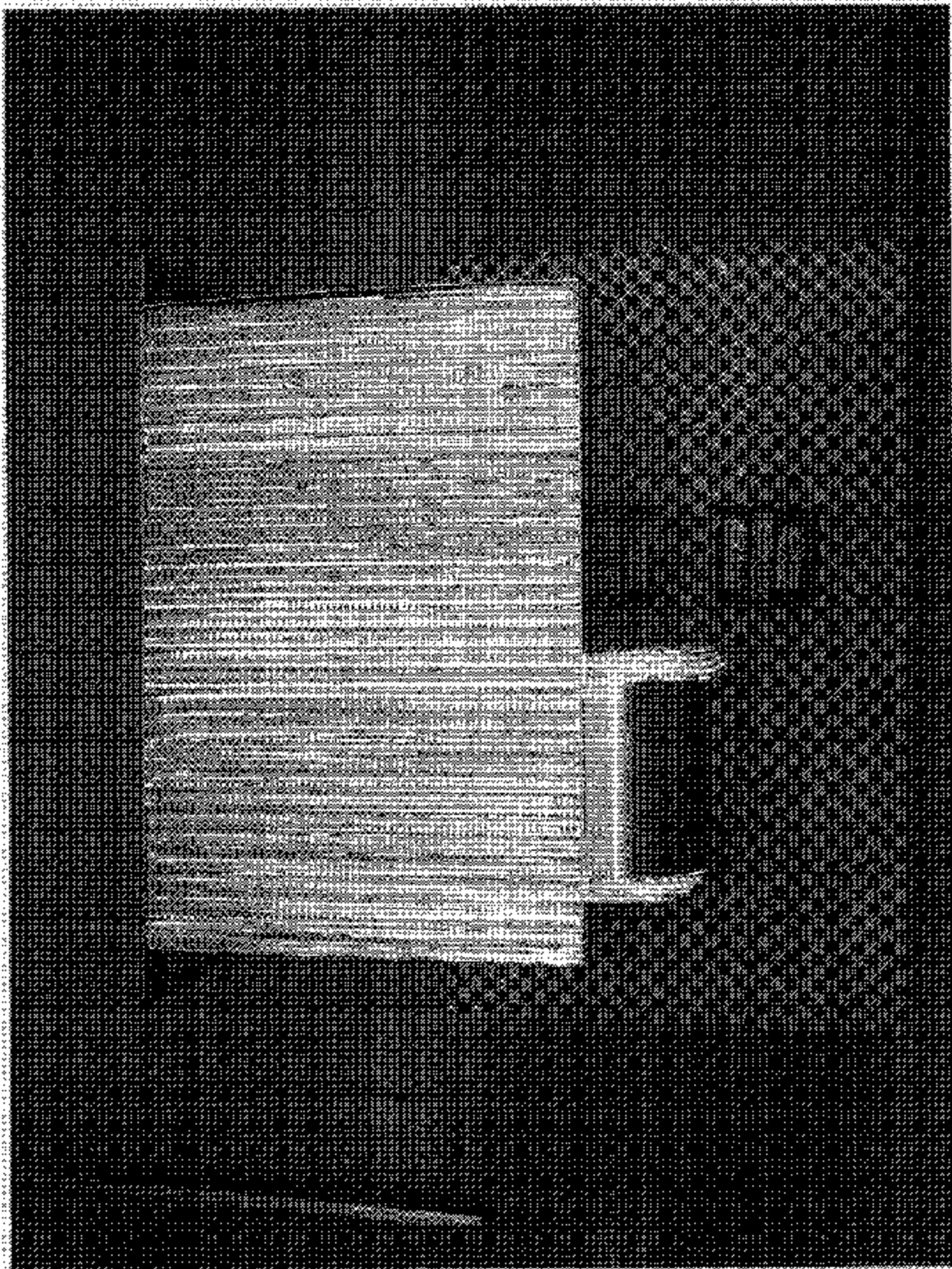


Figure A-11 Pre-Test Right Side View of Impactor Face

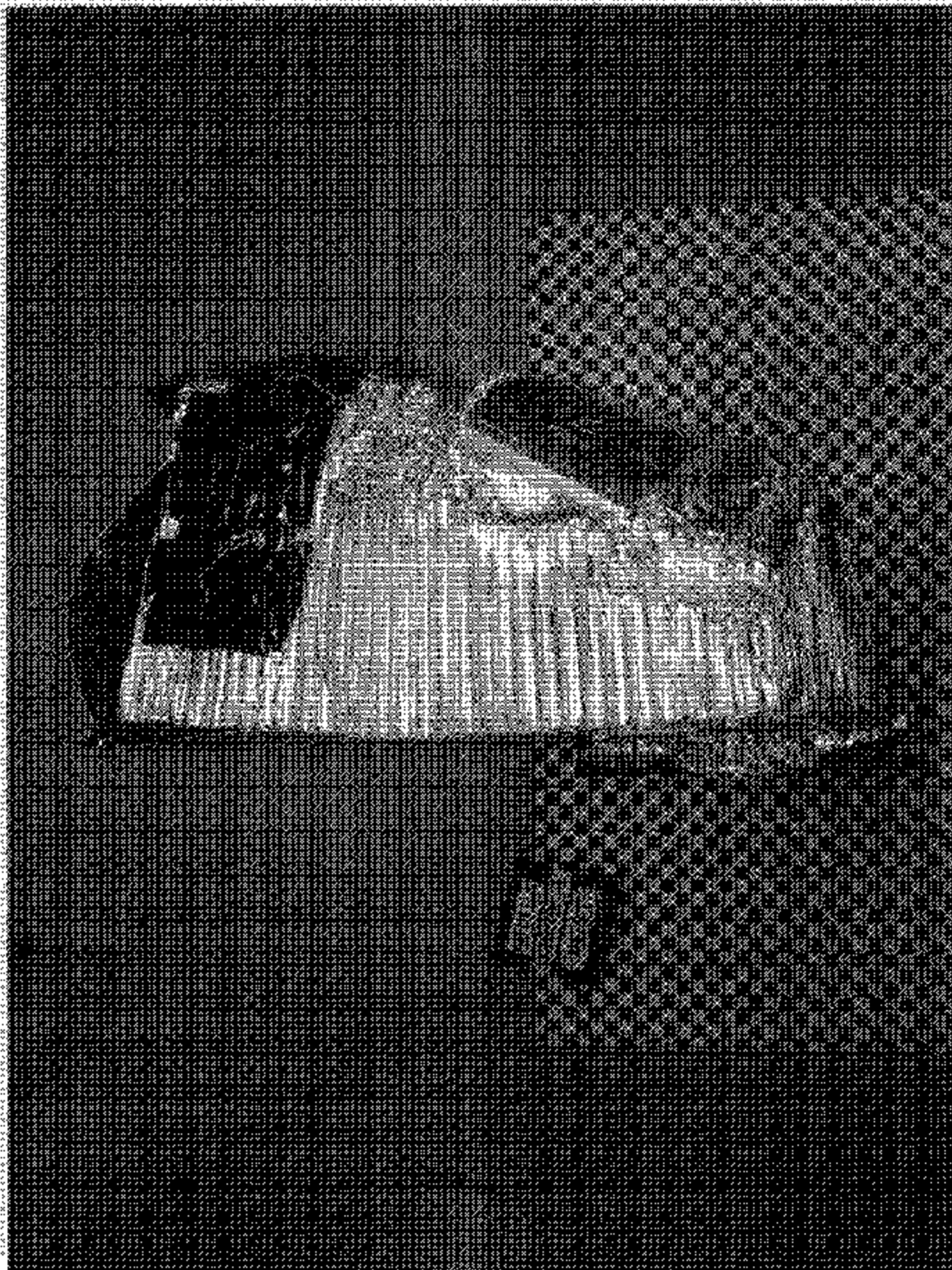


Figure A-12. Post-Test Right Side View of Impactor Face.

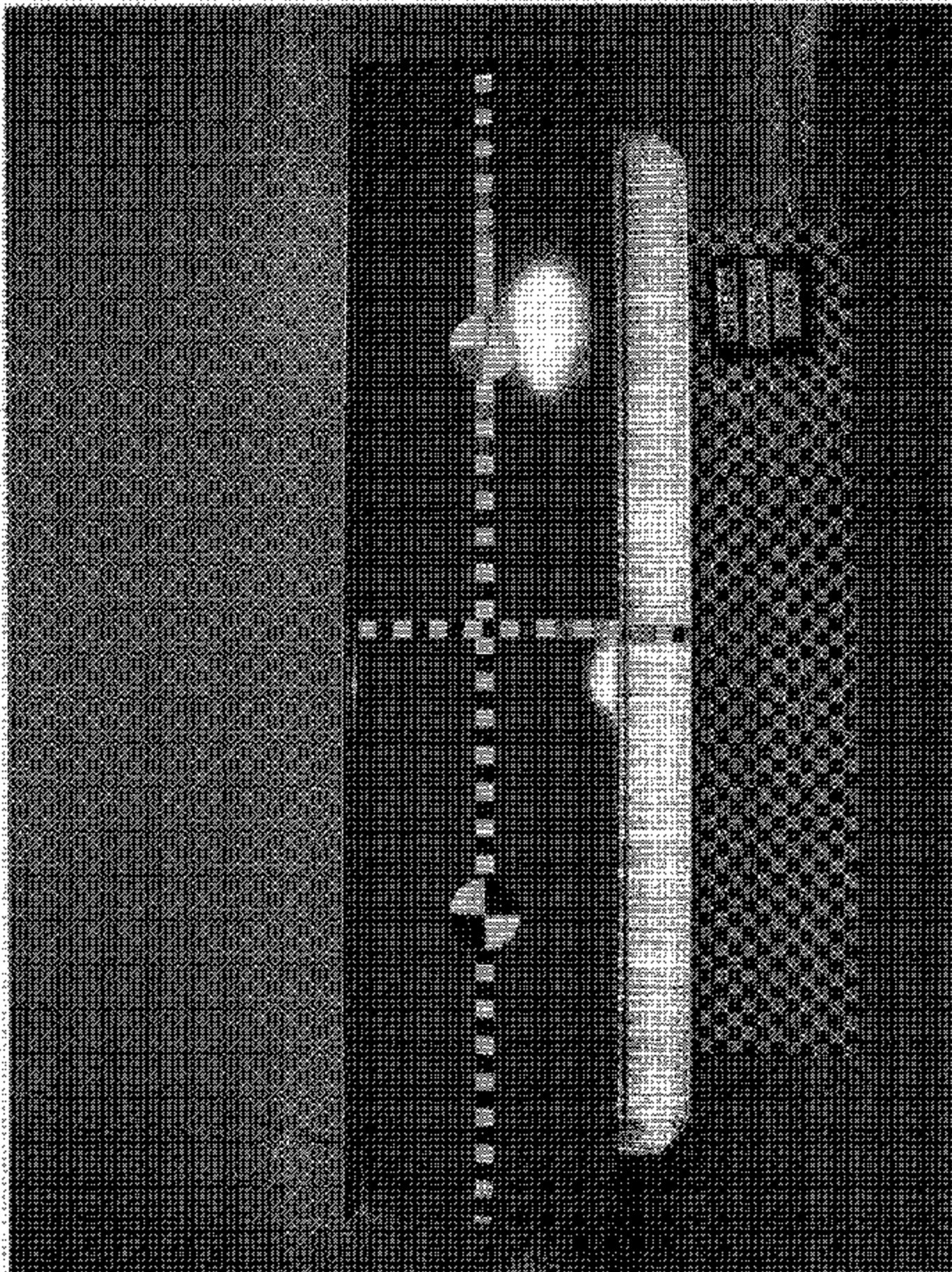


Figure A-13 Pre-Test Top View of Impactor Face

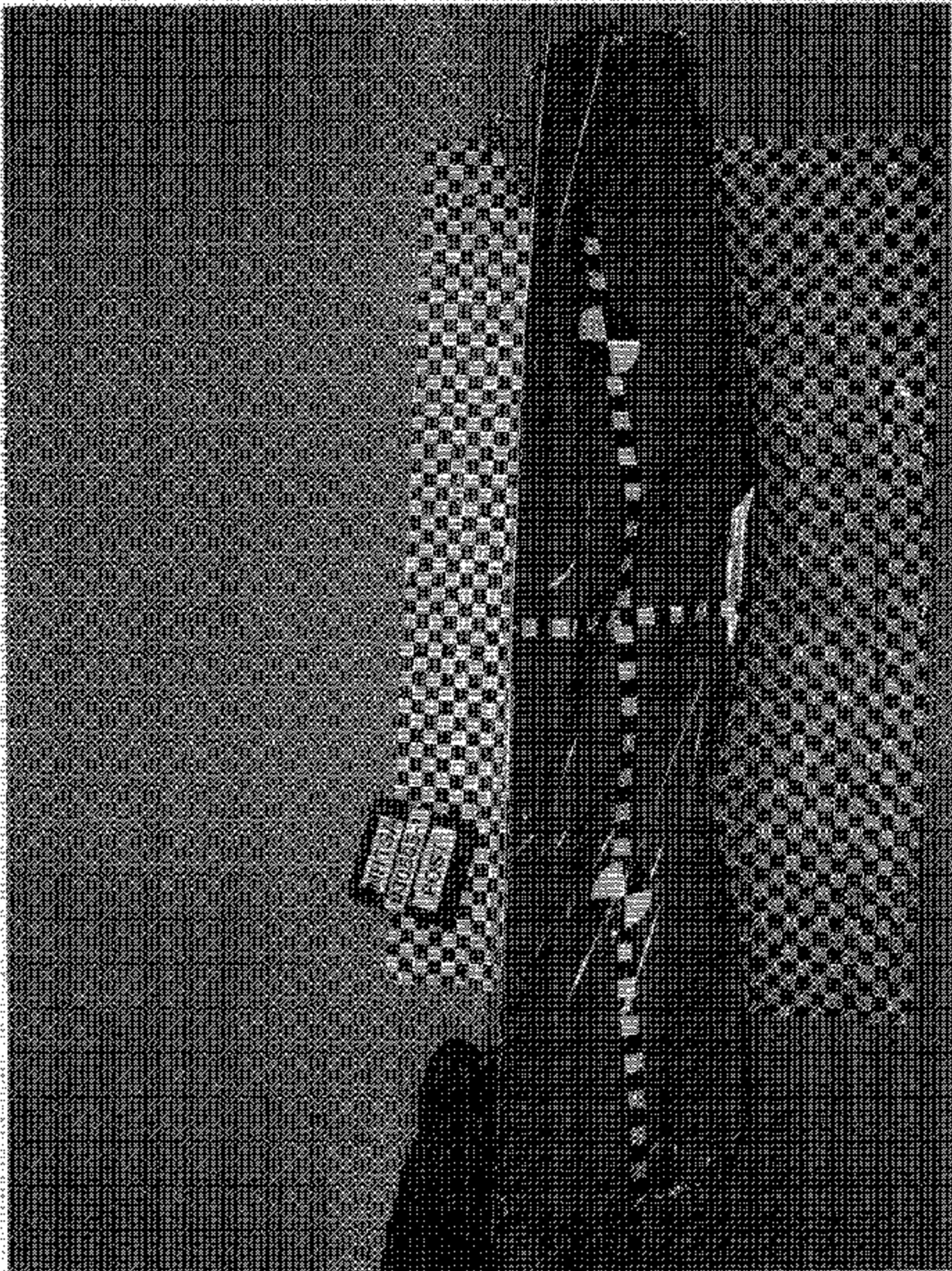


Figure A-14 Post-Test Top View of Impactor Face

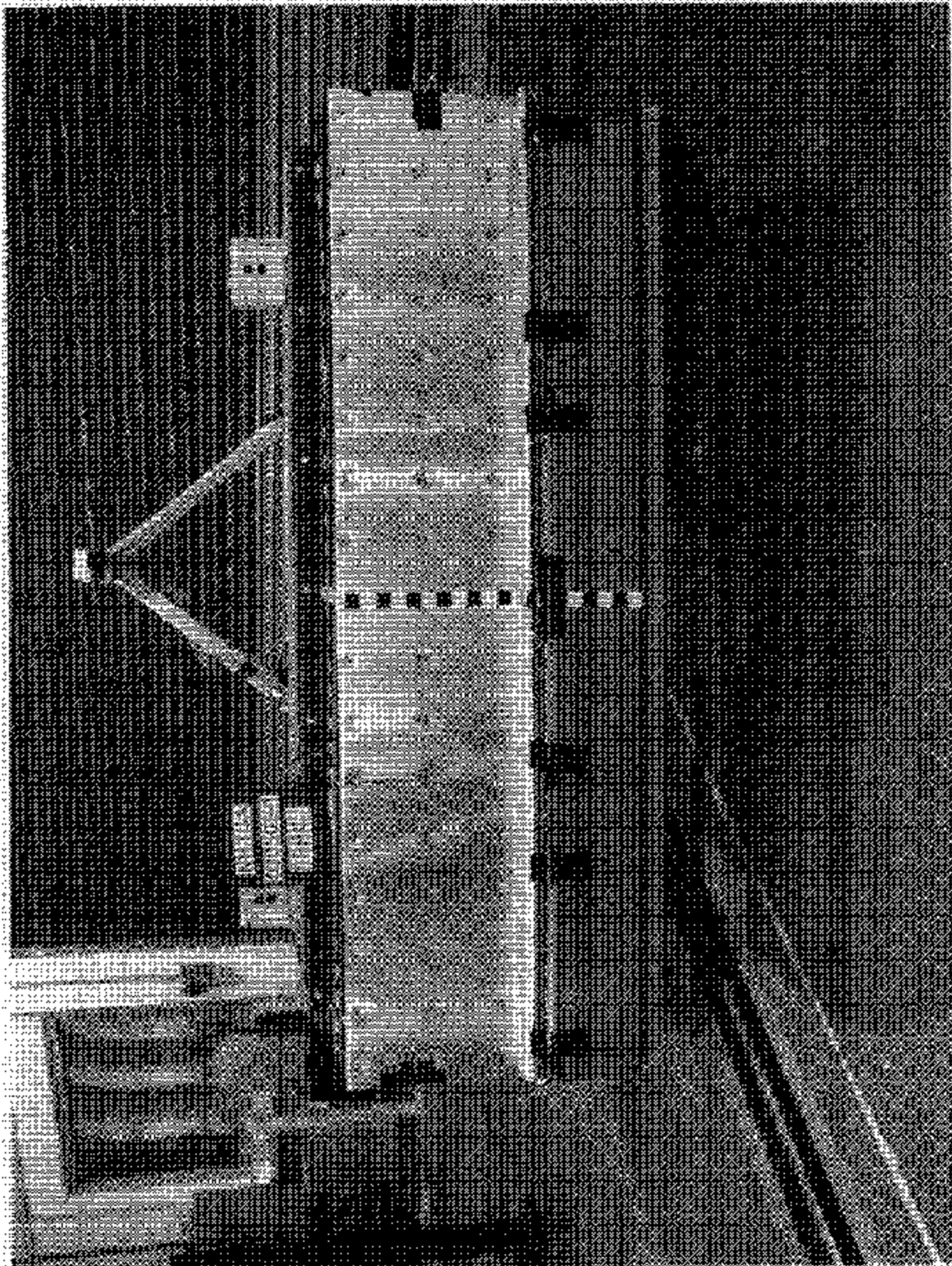


Figure A-15. Pre-Test View of MDB Showing Contact Switches in Place.



Figure A-16 Post-Test Overhead View of MDB and Vehicle

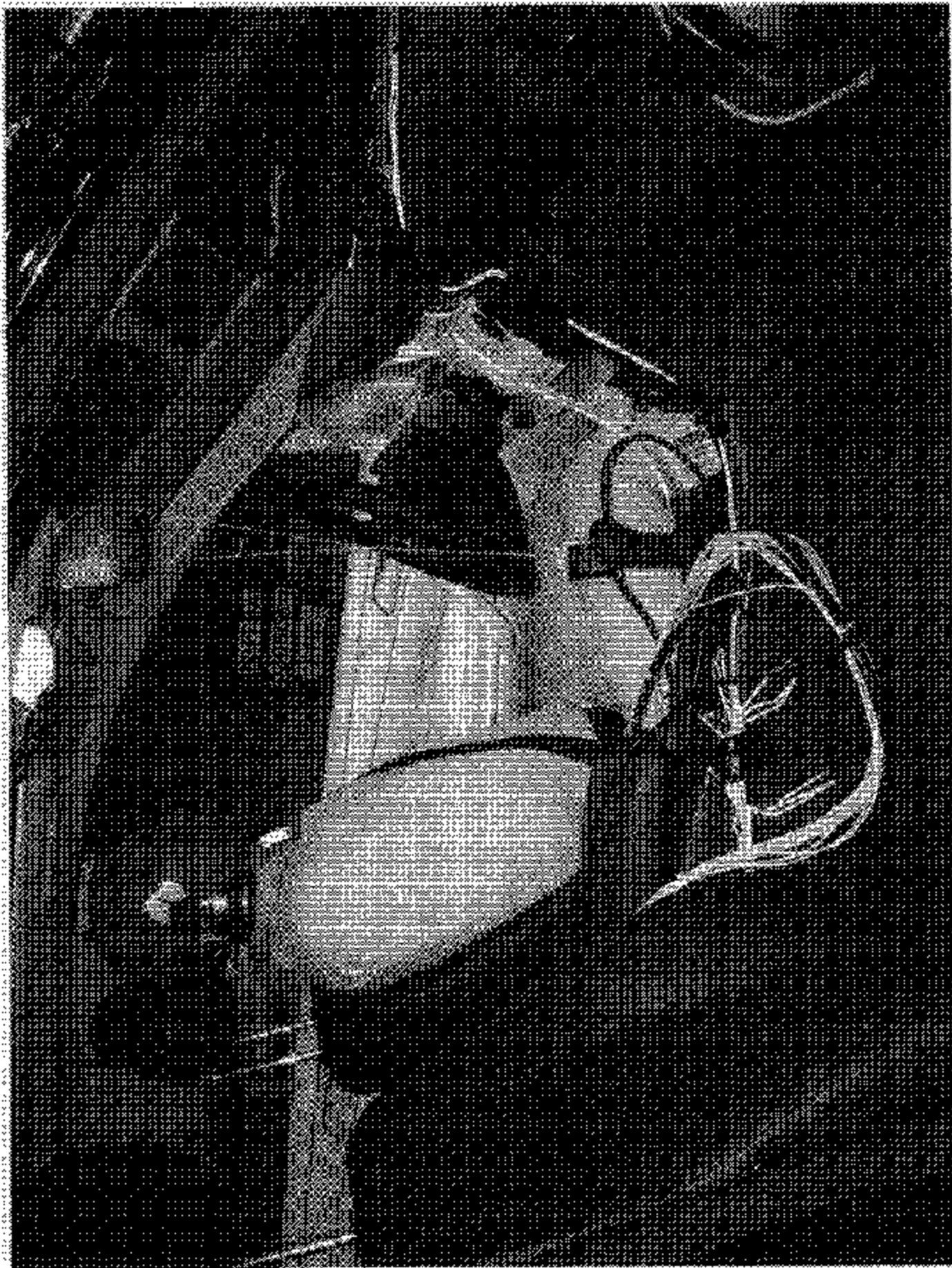


Figure A-17. Pre-Test Right Occupant Compartment View of Front SID

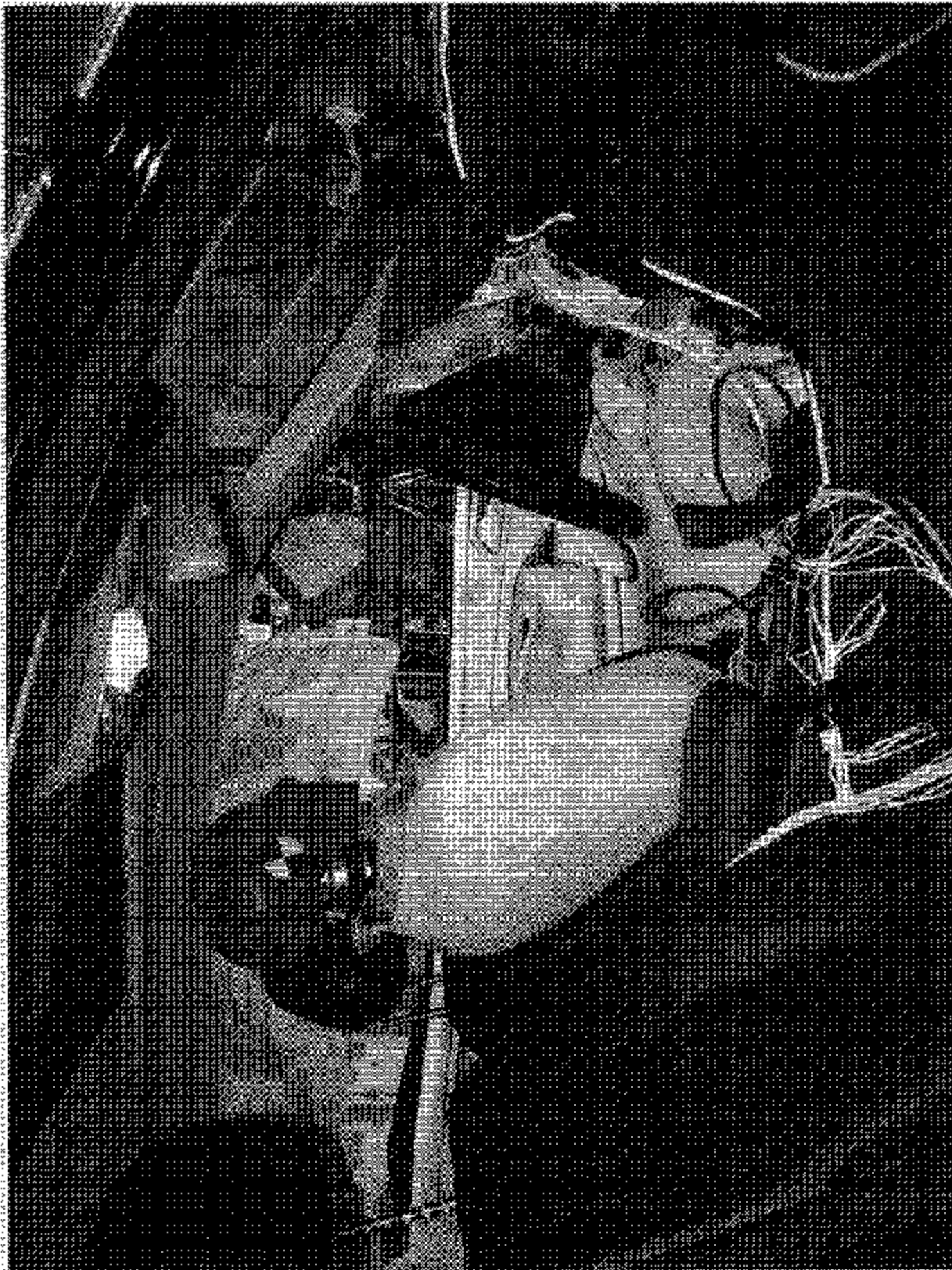


Figure A-18 Post-Test Right Occupant Compartment View of Front SID



Figure A-19. Pre-Test Right Occupant Compartment View of Rear SID



Figure A-20 Post-Test Right Occupant Compartment View of Rear SID

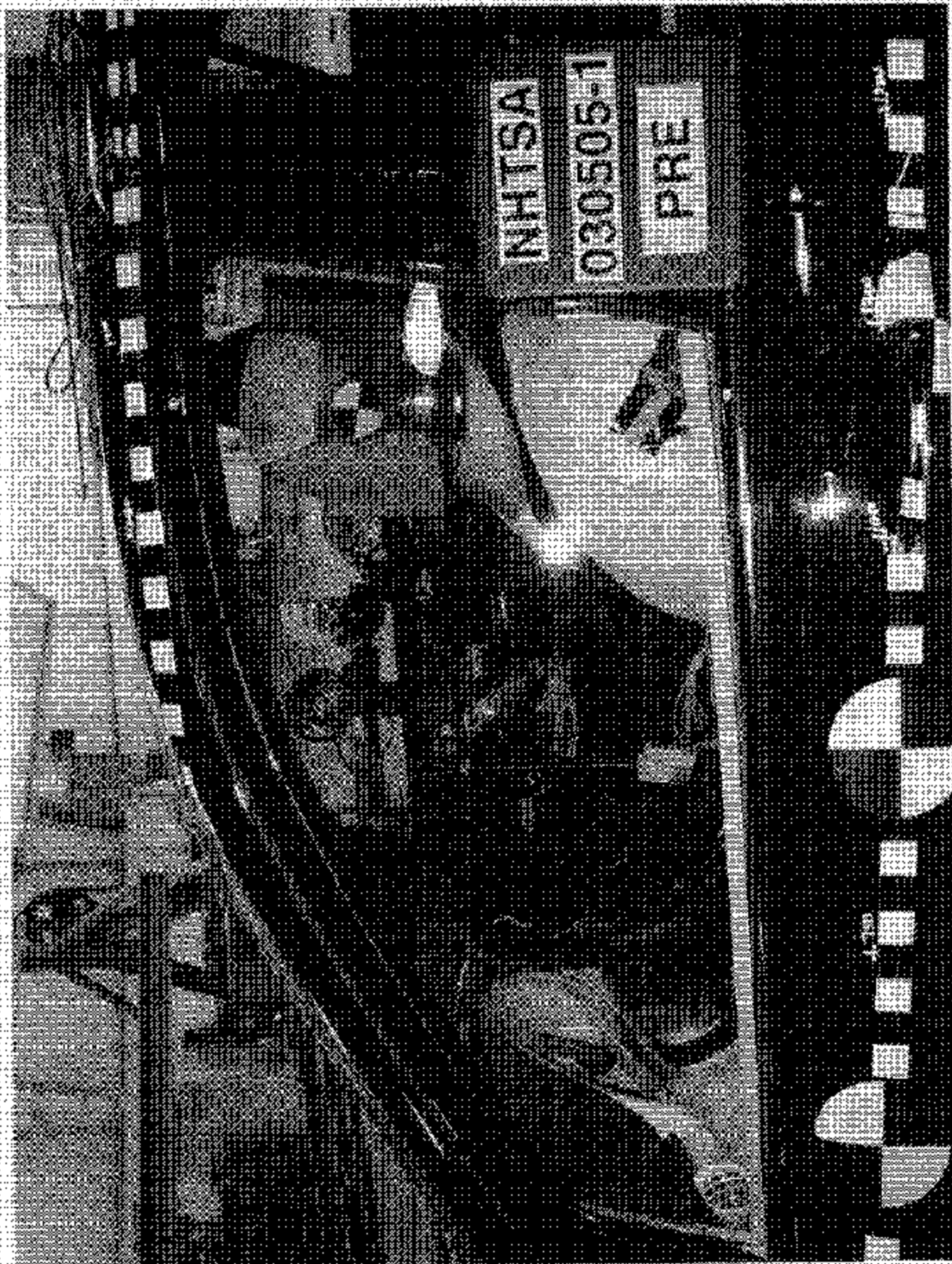


Figure A-21. Pre-Test Left View of Front SID

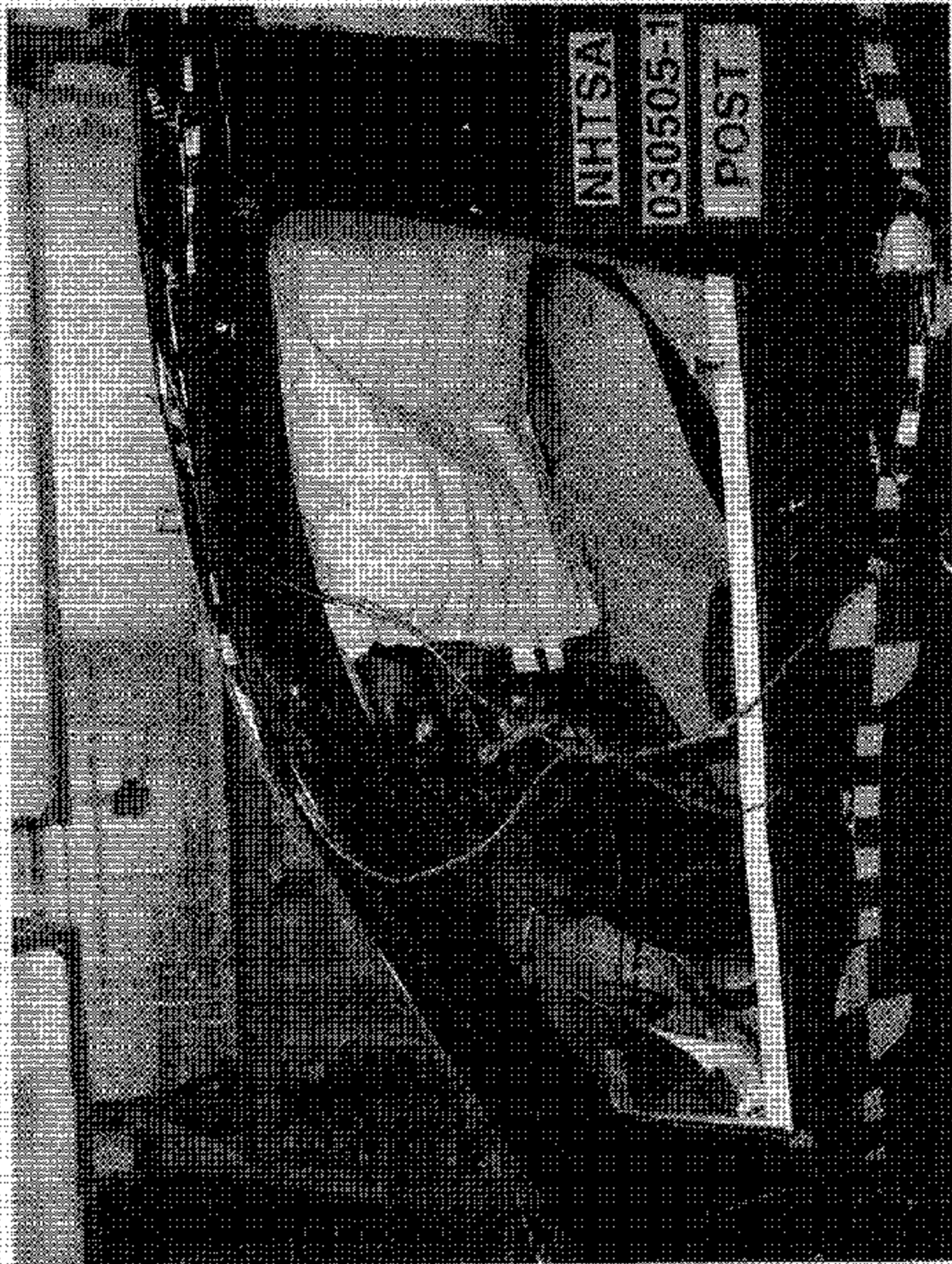


Figure A-22 Post-Test Left View of Front SID

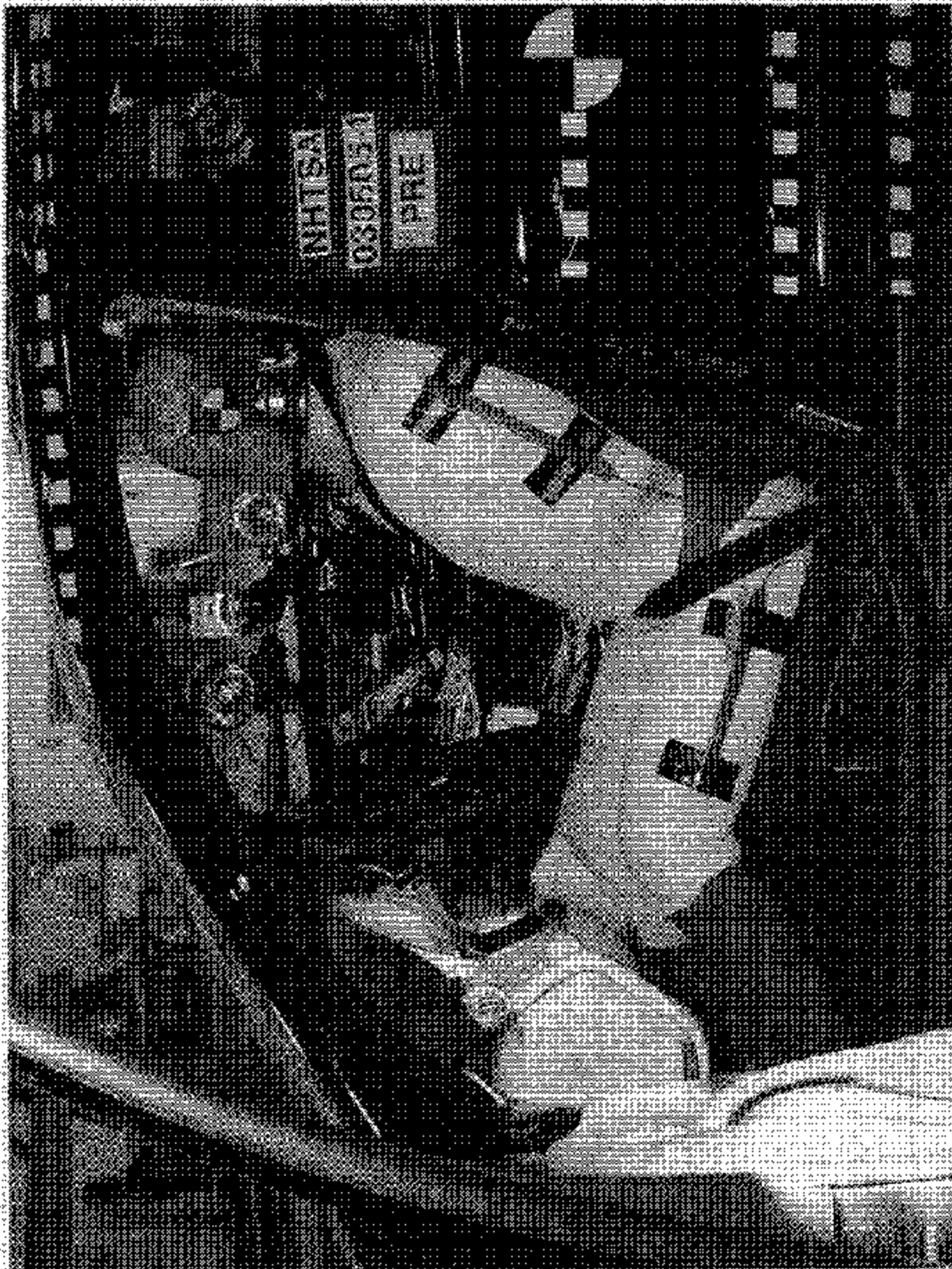


Figure A-23. Pre-Test Left View of Front SFD and Belt Position

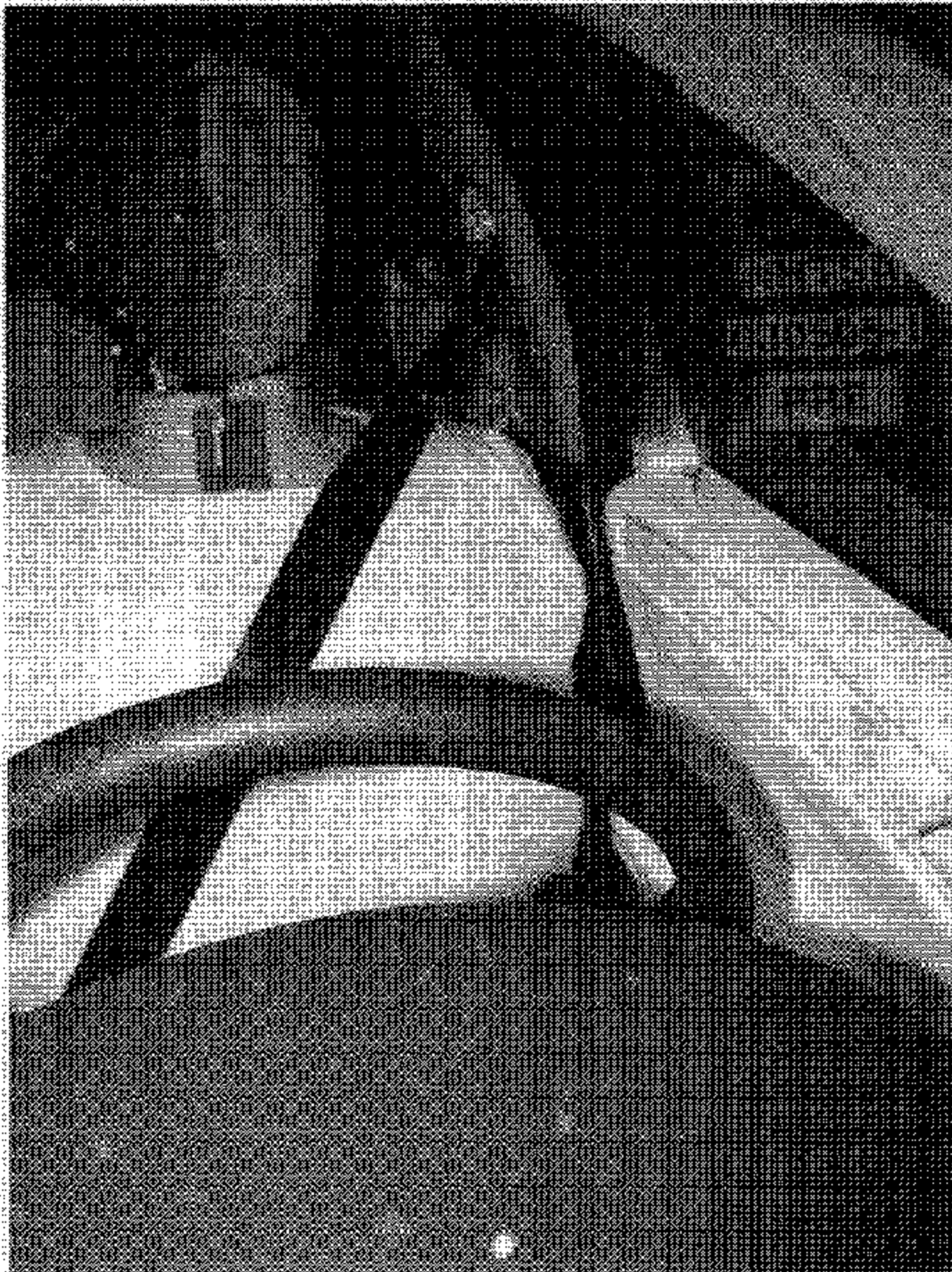


Figure A-24 Pre-Test View of Front SIB and Door Clearance



Figure A-25 Post-Test View of Front SID and Door Clearance

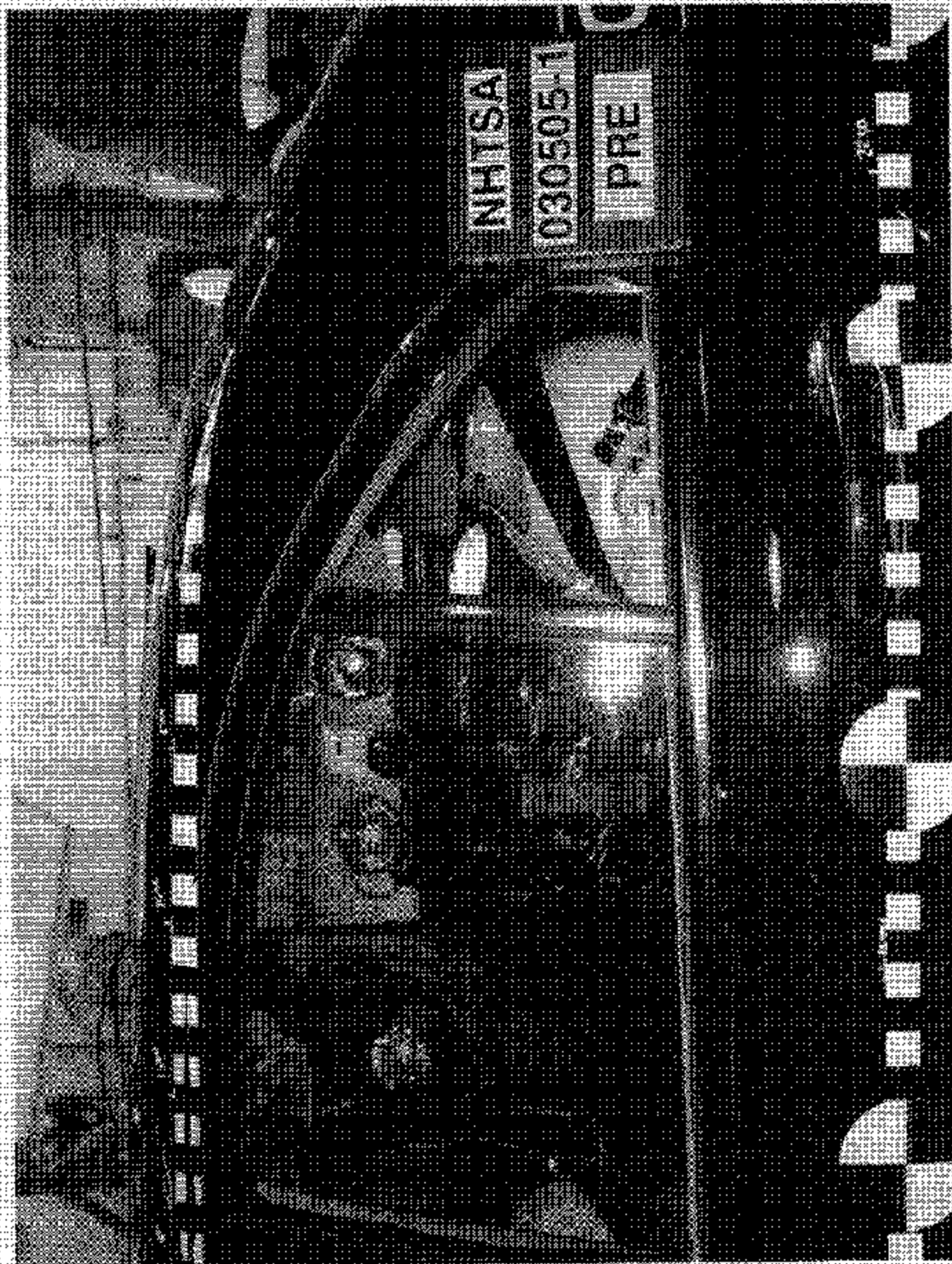


Figure A-26. Pre-Test Left View of Rear SID

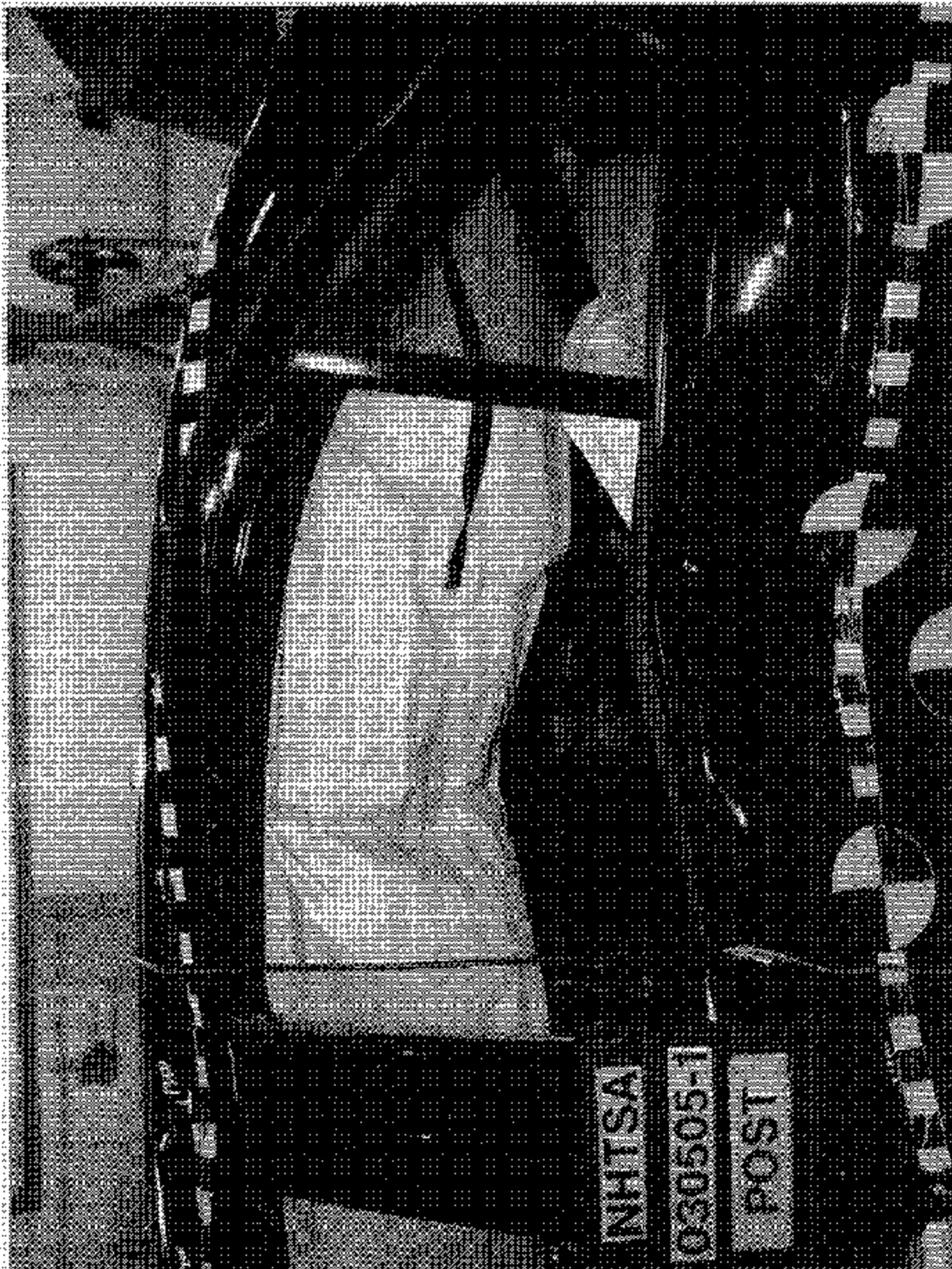


Figure A-27 Post-Test Left View of Rear SID

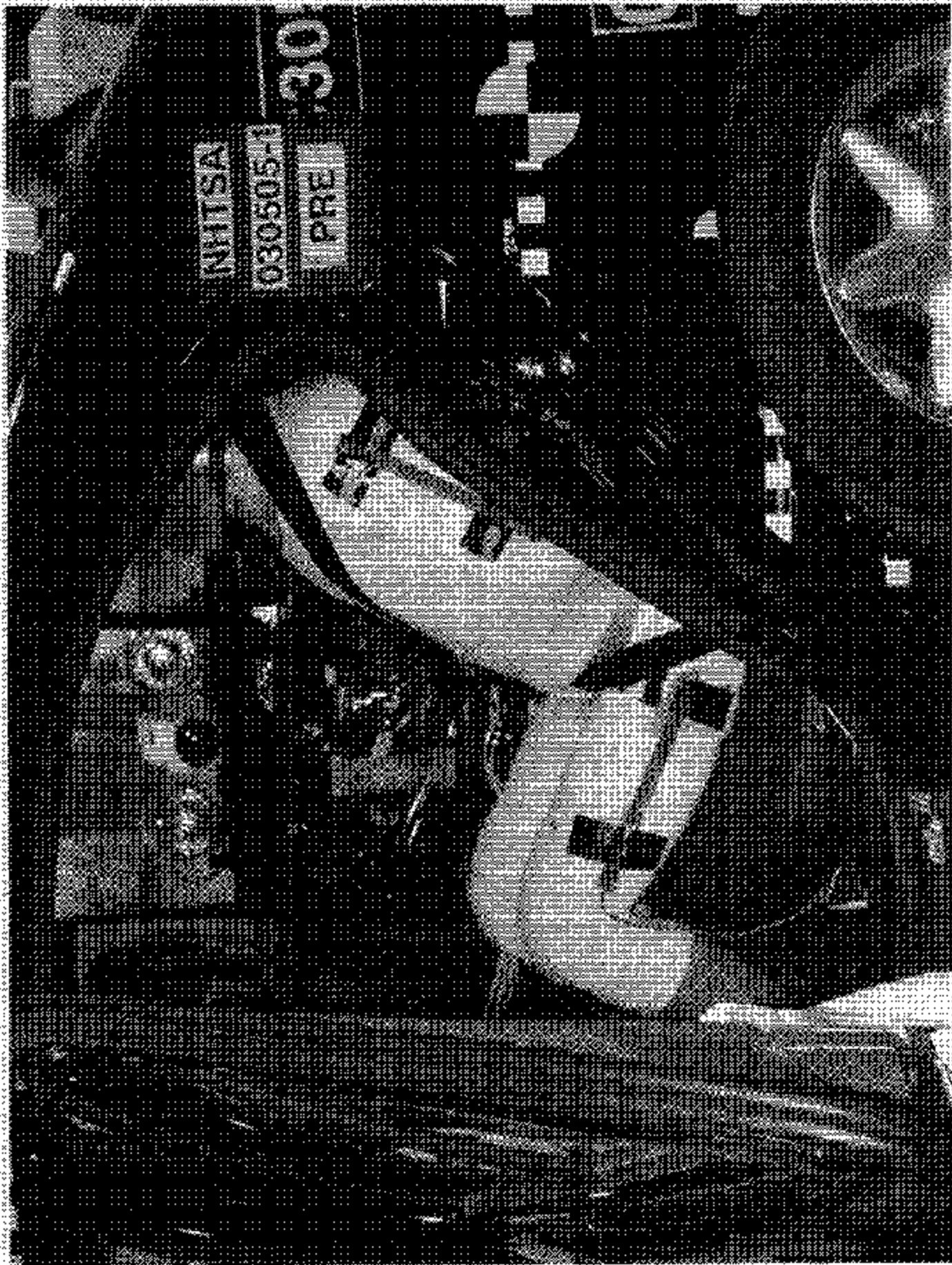


Figure A-29. Pre-Test Left View of Rear SID and Belt Position

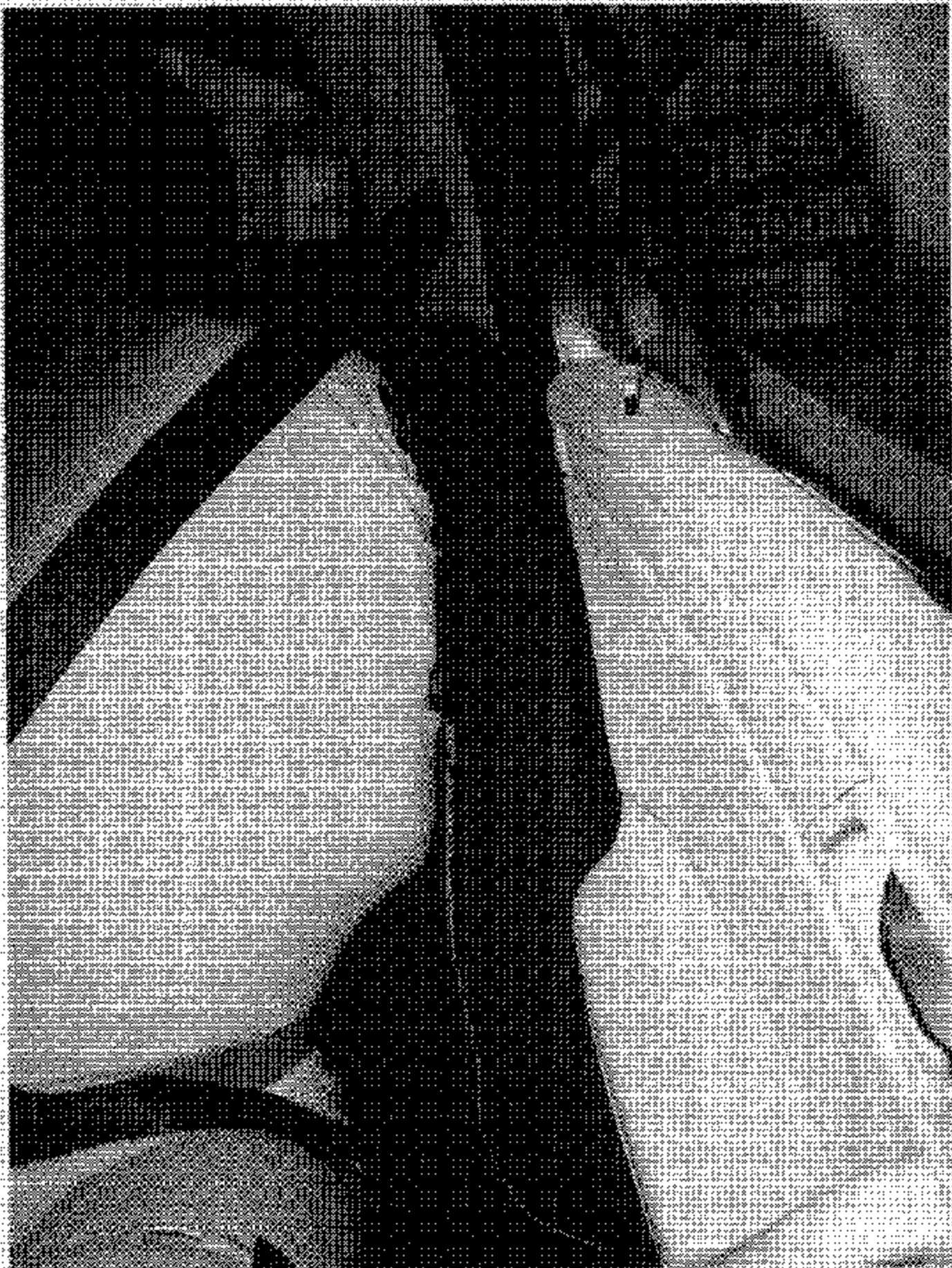


Figure A-29 Pre-Test View of Rear SID and Door Clearance



Figure A-30 Post-Test View of Rear SID and Door Clearance

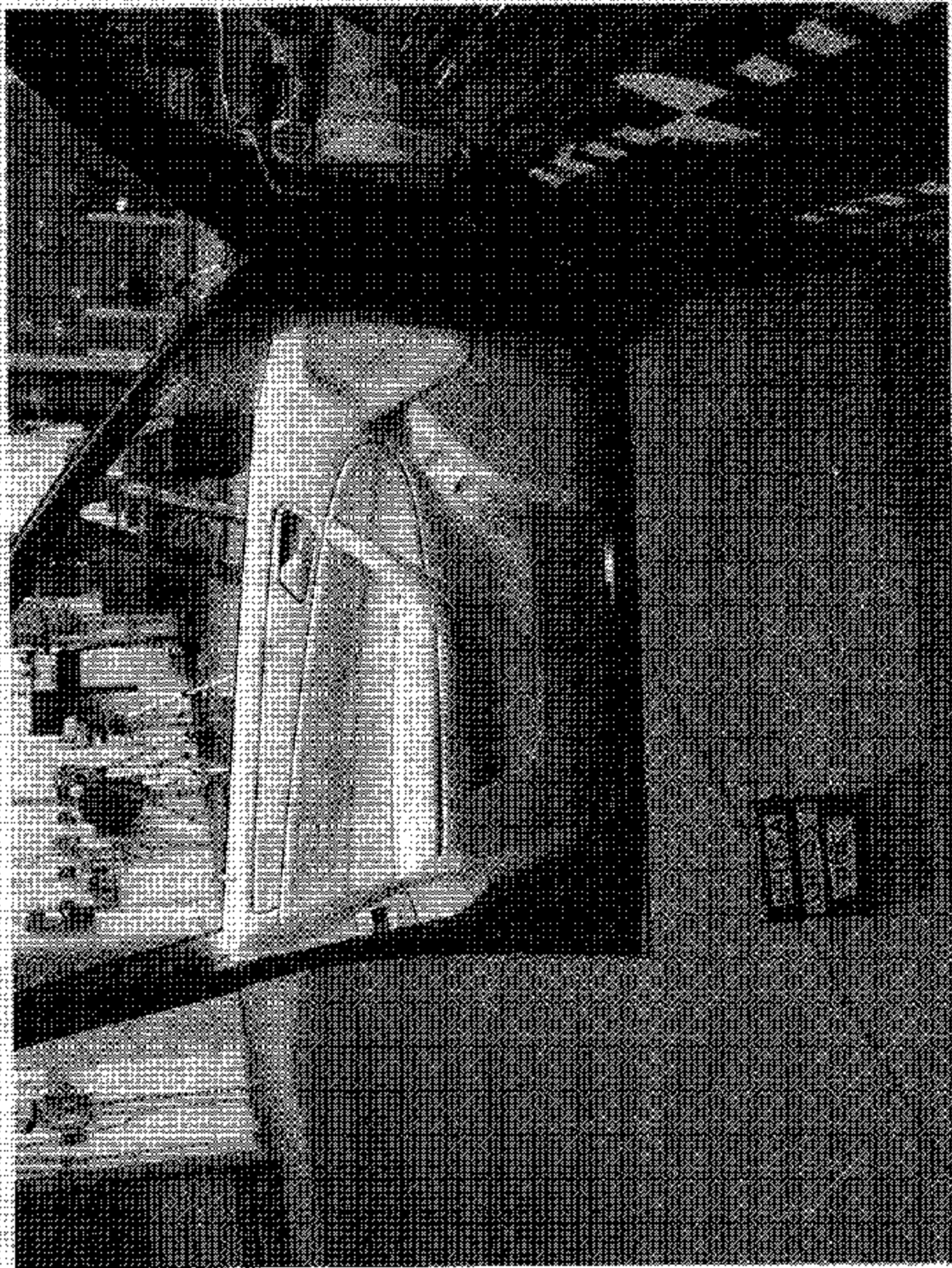


Figure A-31 Pre-Test Interior of Front Door

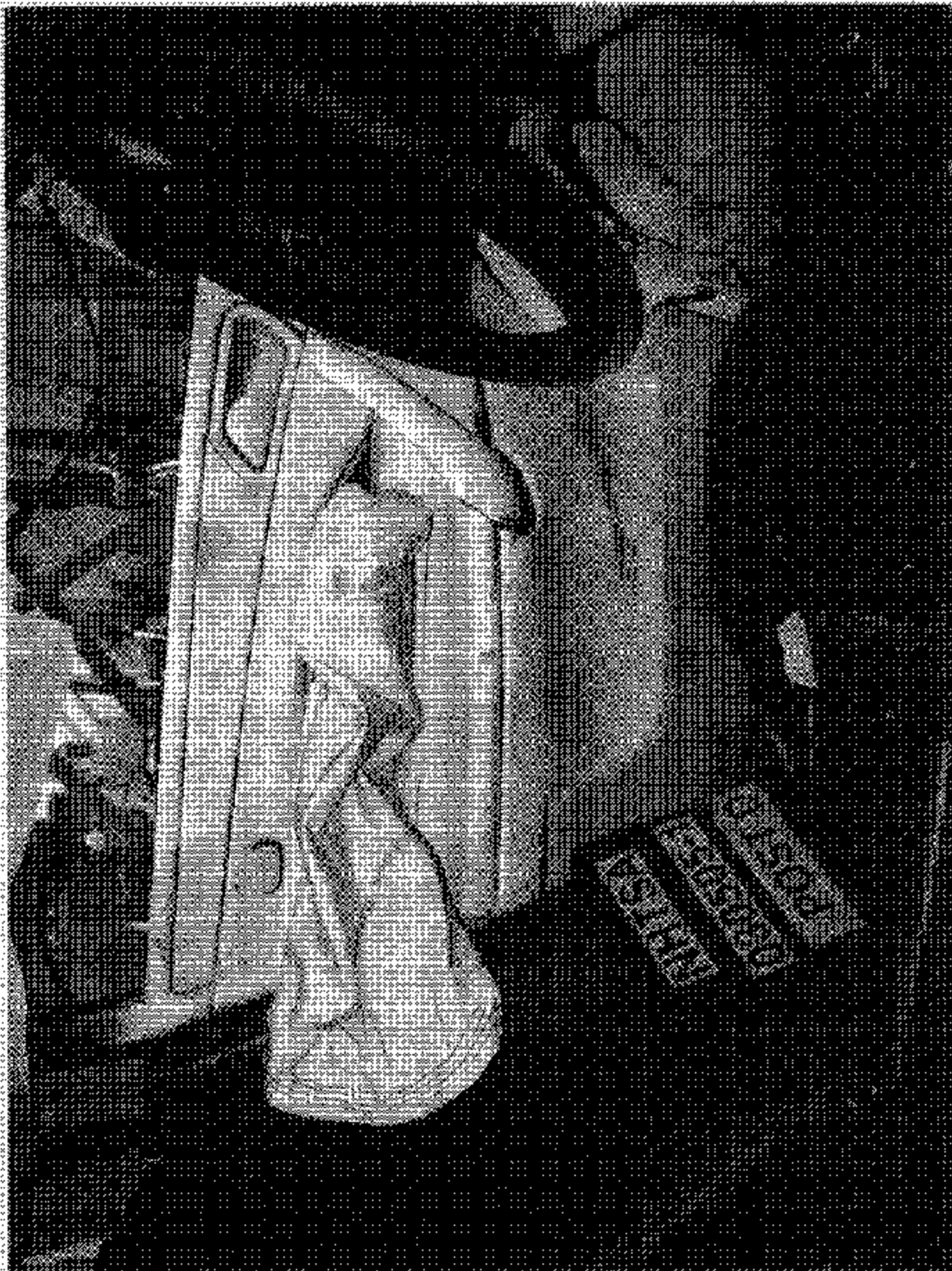


Figure A-32 Post-Test Interior of Front Door Showing SID Impact Location



Figure A-33 Post-Test Front SID Contact - View 1



Figure A-34. Post-Test Front SIB Contact - View 2



Figure A-35. Post-Test Front SID Contact-- View 3

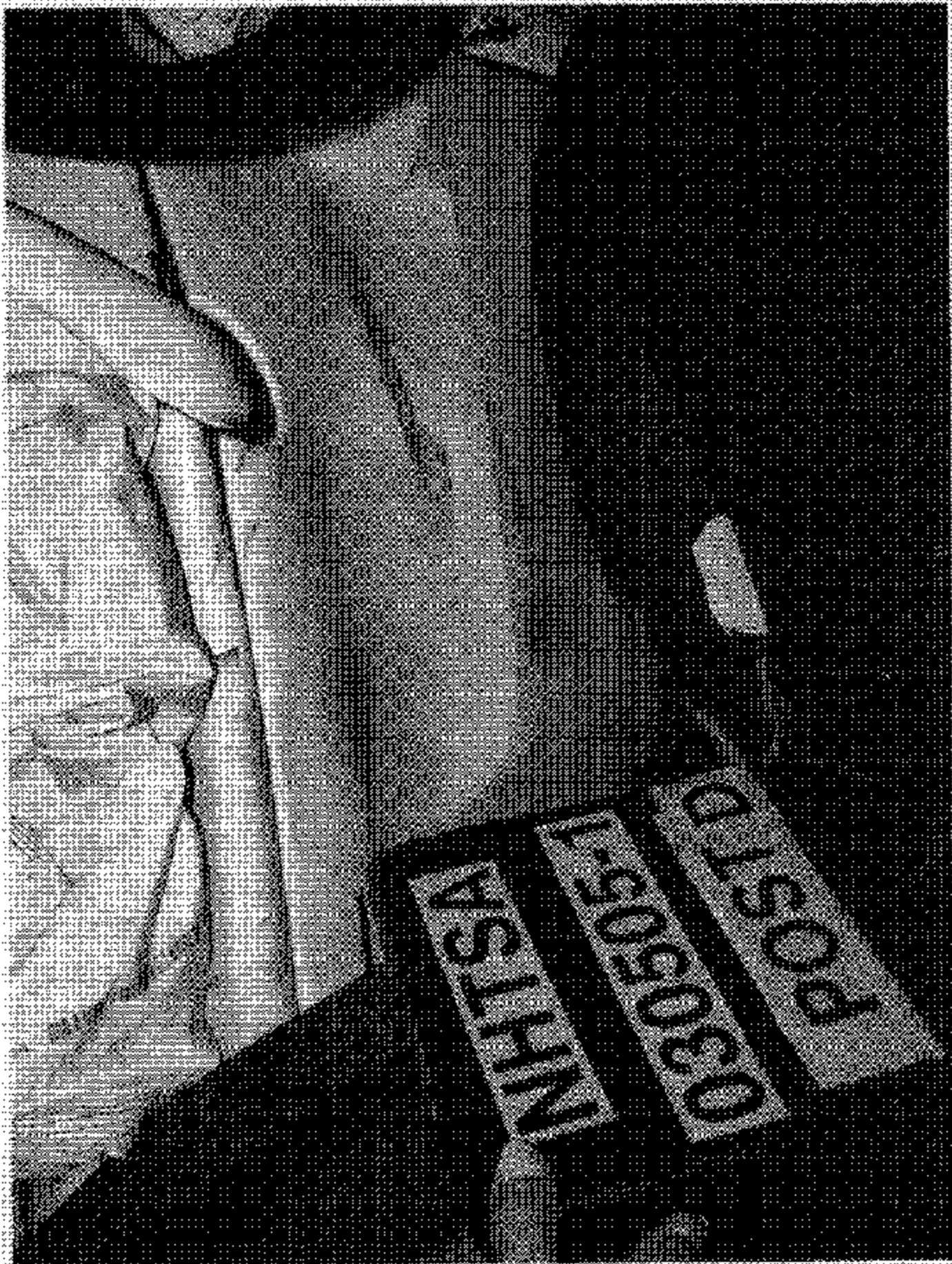


Figure A-36 Post-Test Front SIB Contact - View 4

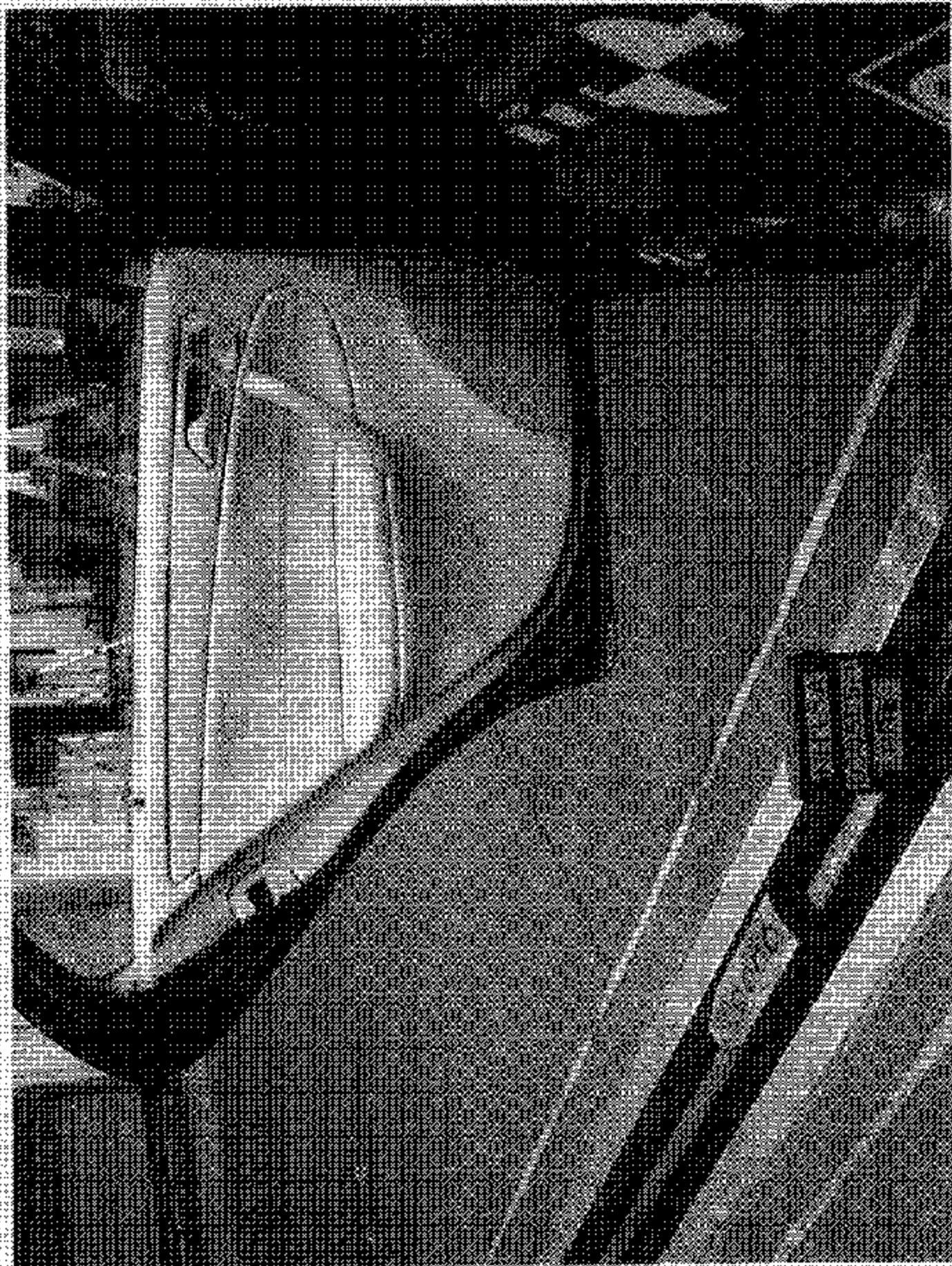


Figure A-37. Pre-Test Interior of Rear Panel

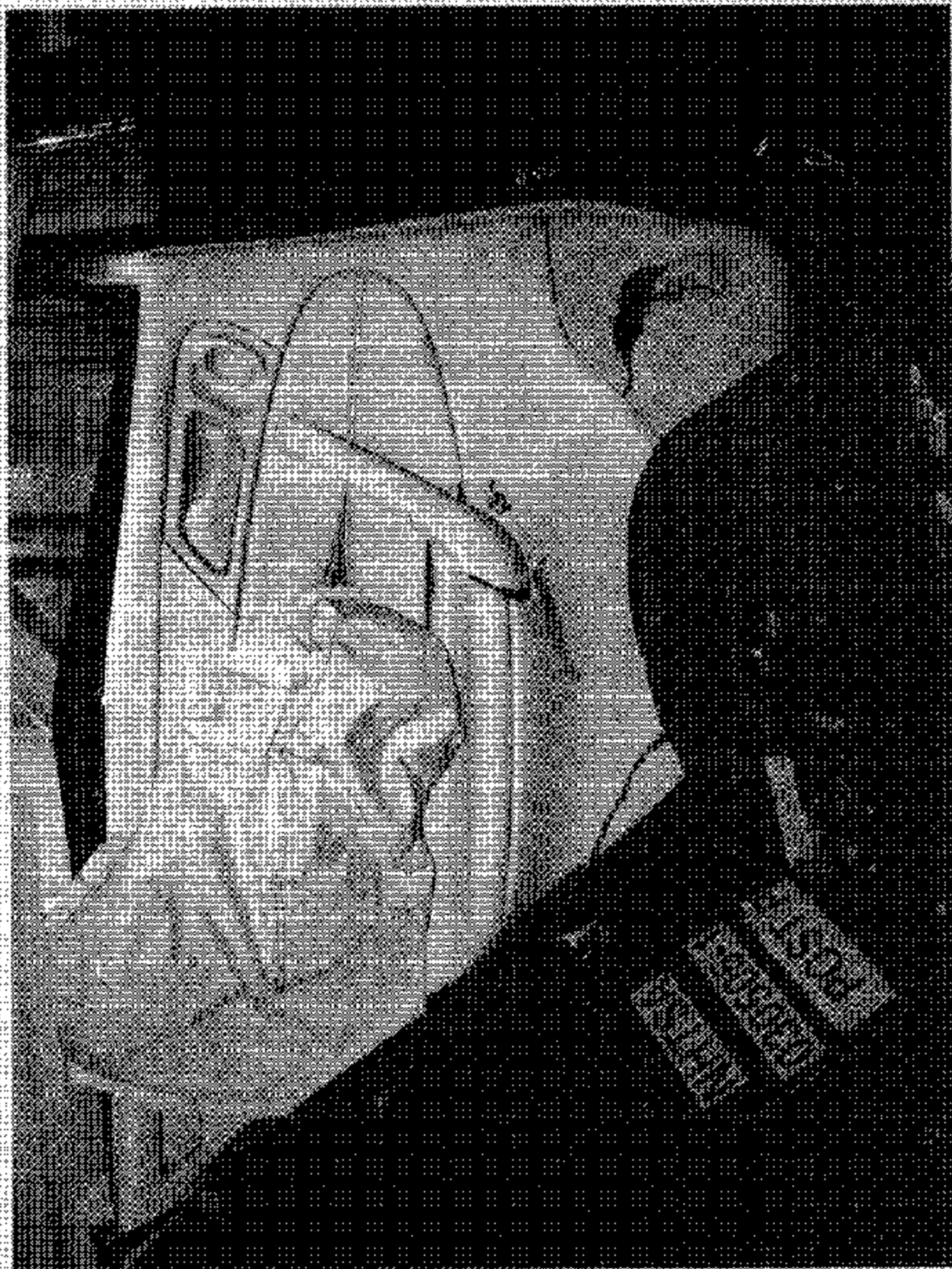


Figure A-38 Post-Test Interior of Rear Panel Showing SID Impact Locations

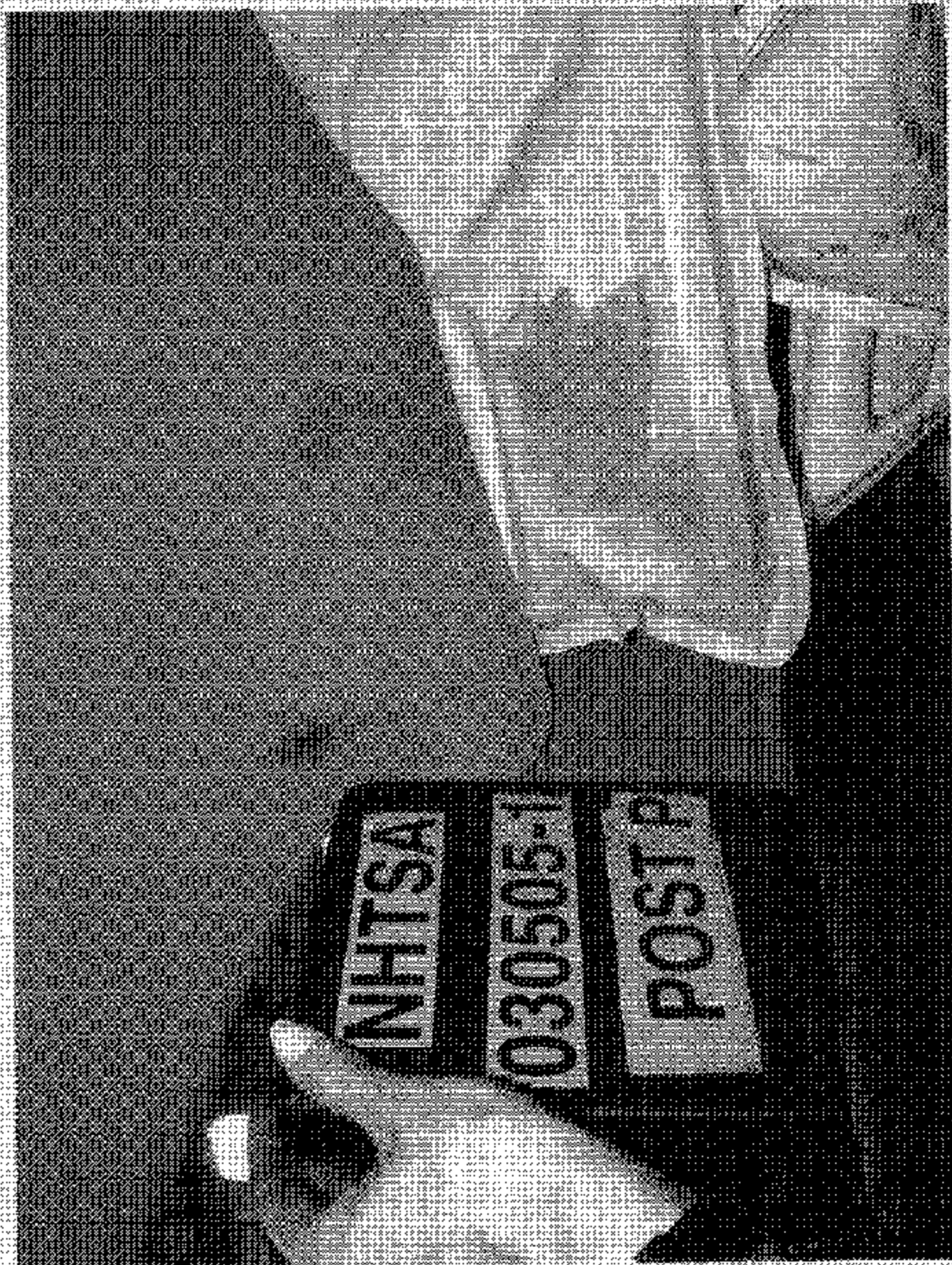


Figure A-39 Post-Test Rear SID Contact - View 1

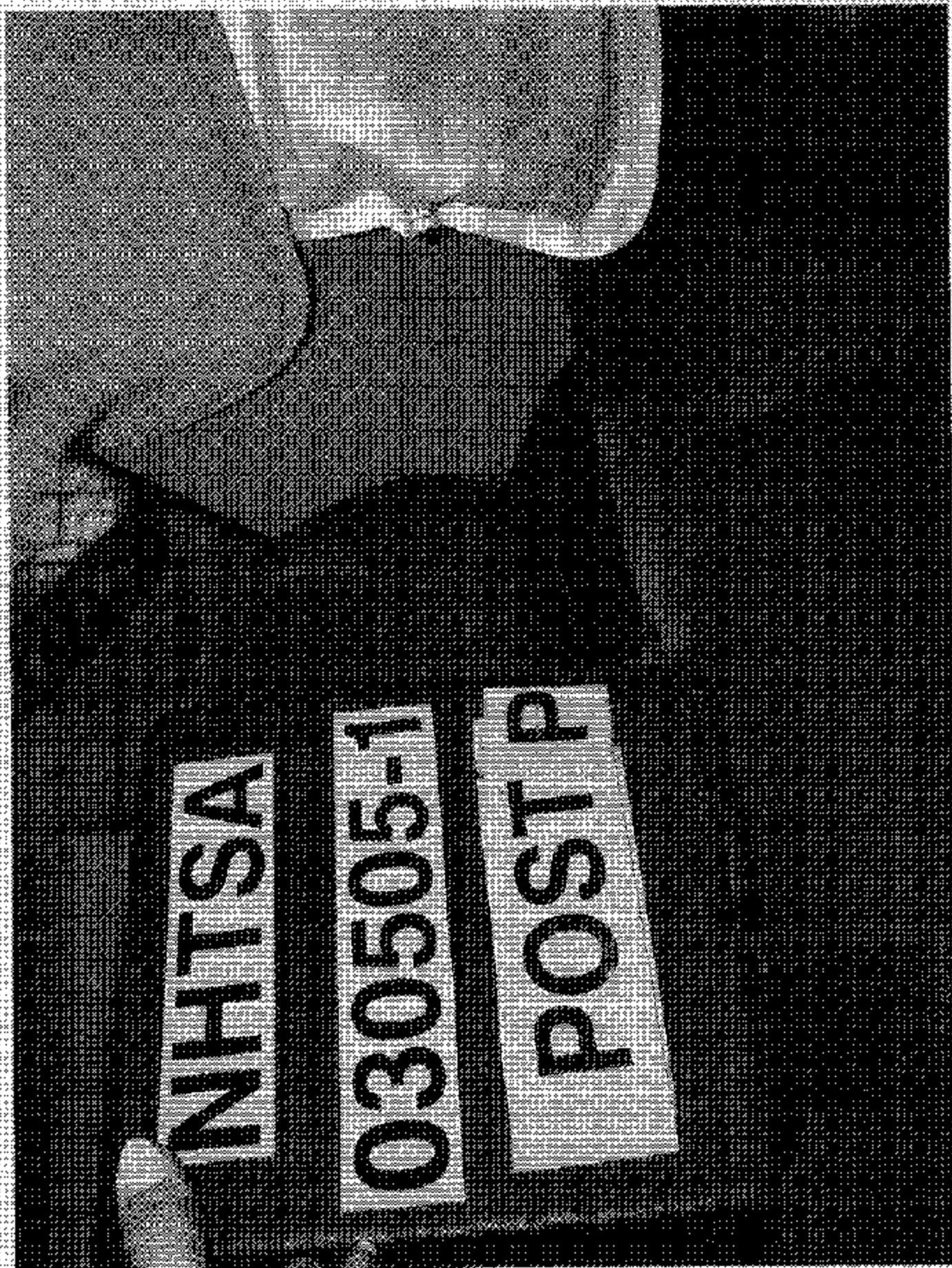


Figure A-40. Post-Test Rear SID Contact - View 2

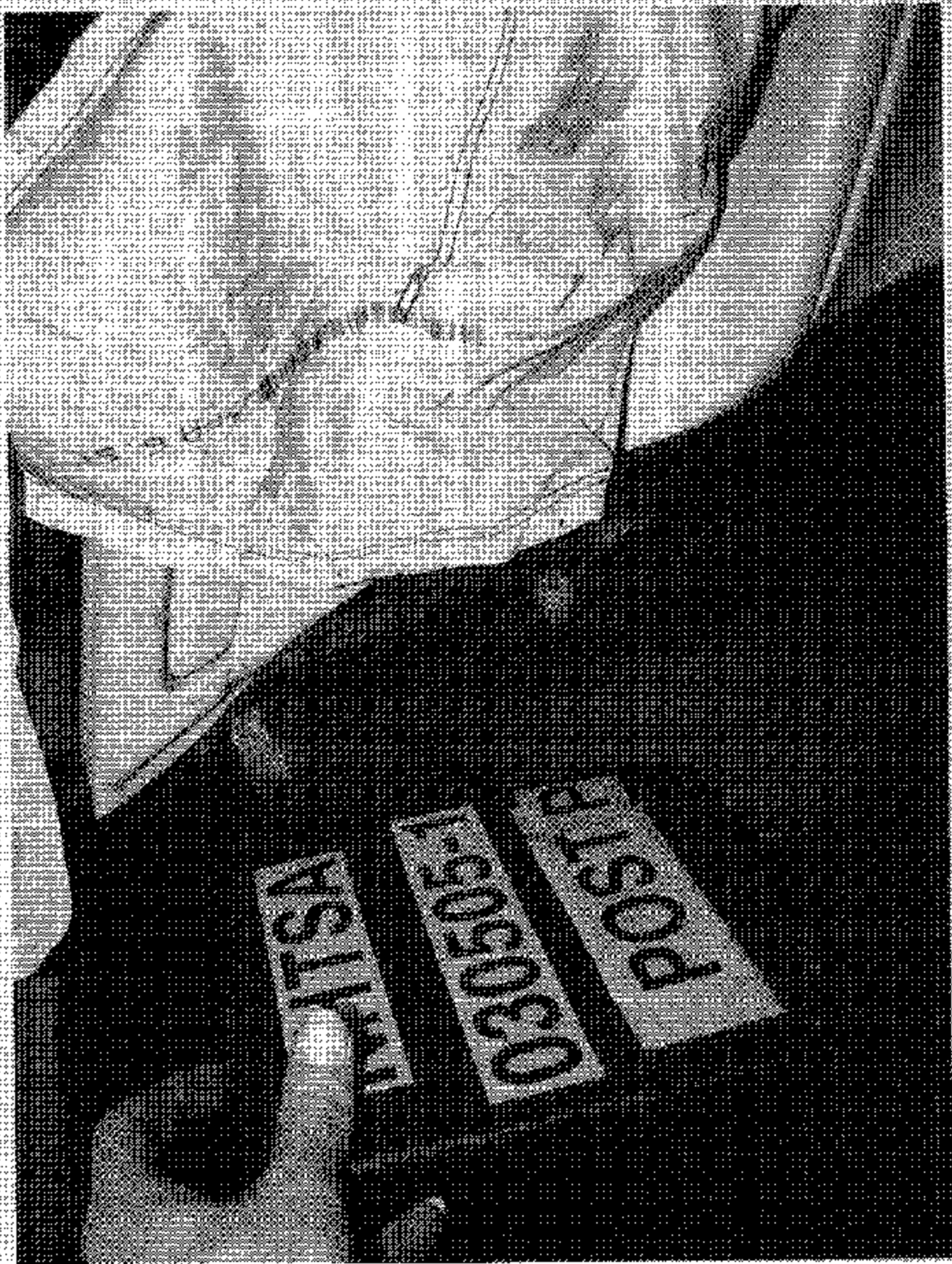


Figure A-41 Post-Test Rear SID Contact - View 3



Figure A-42 Post-Test Rear SHB Contact - View A

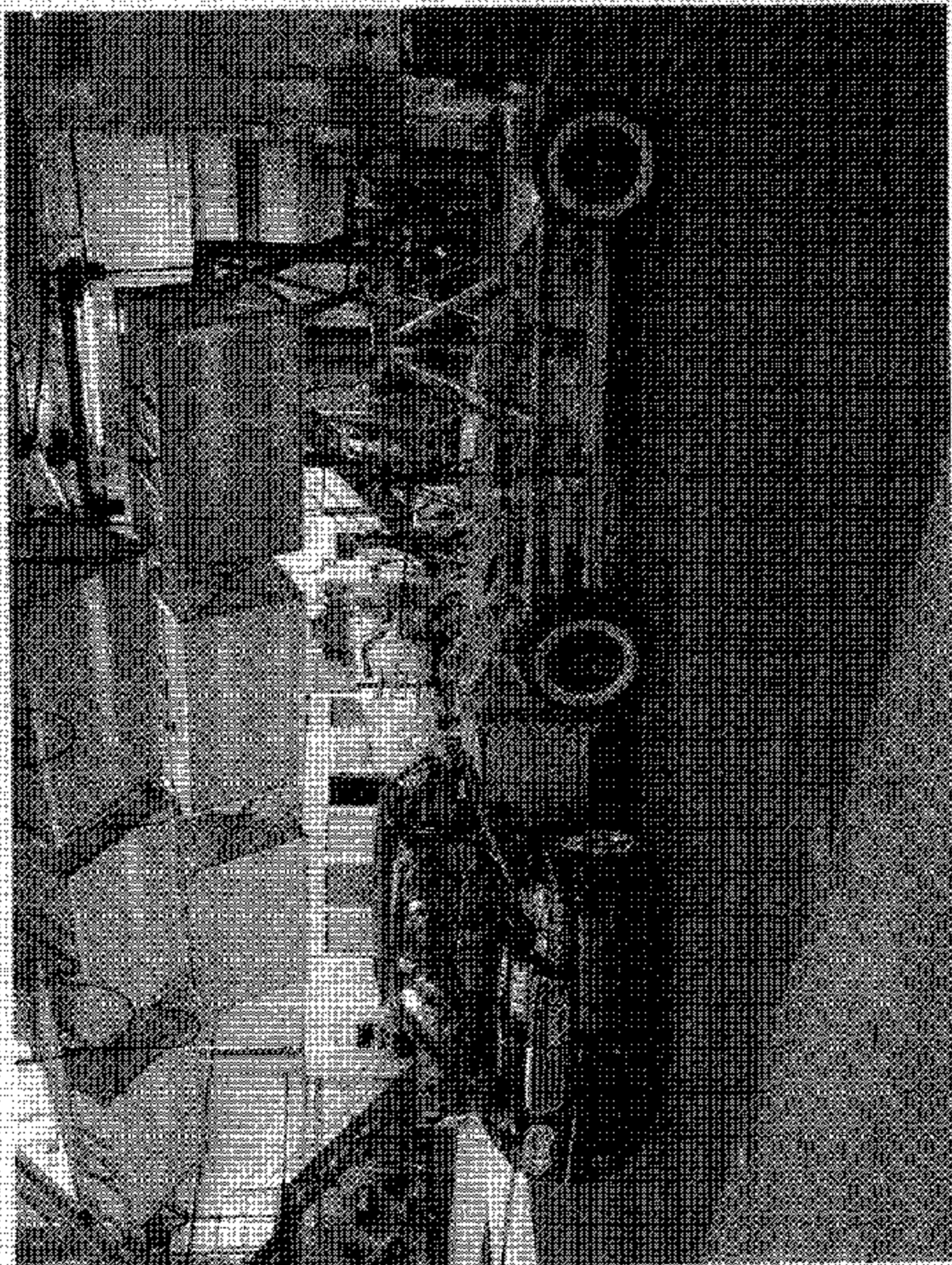


Figure A-43 Pre-Test Left Side View of MDB With Impactor Face in Position

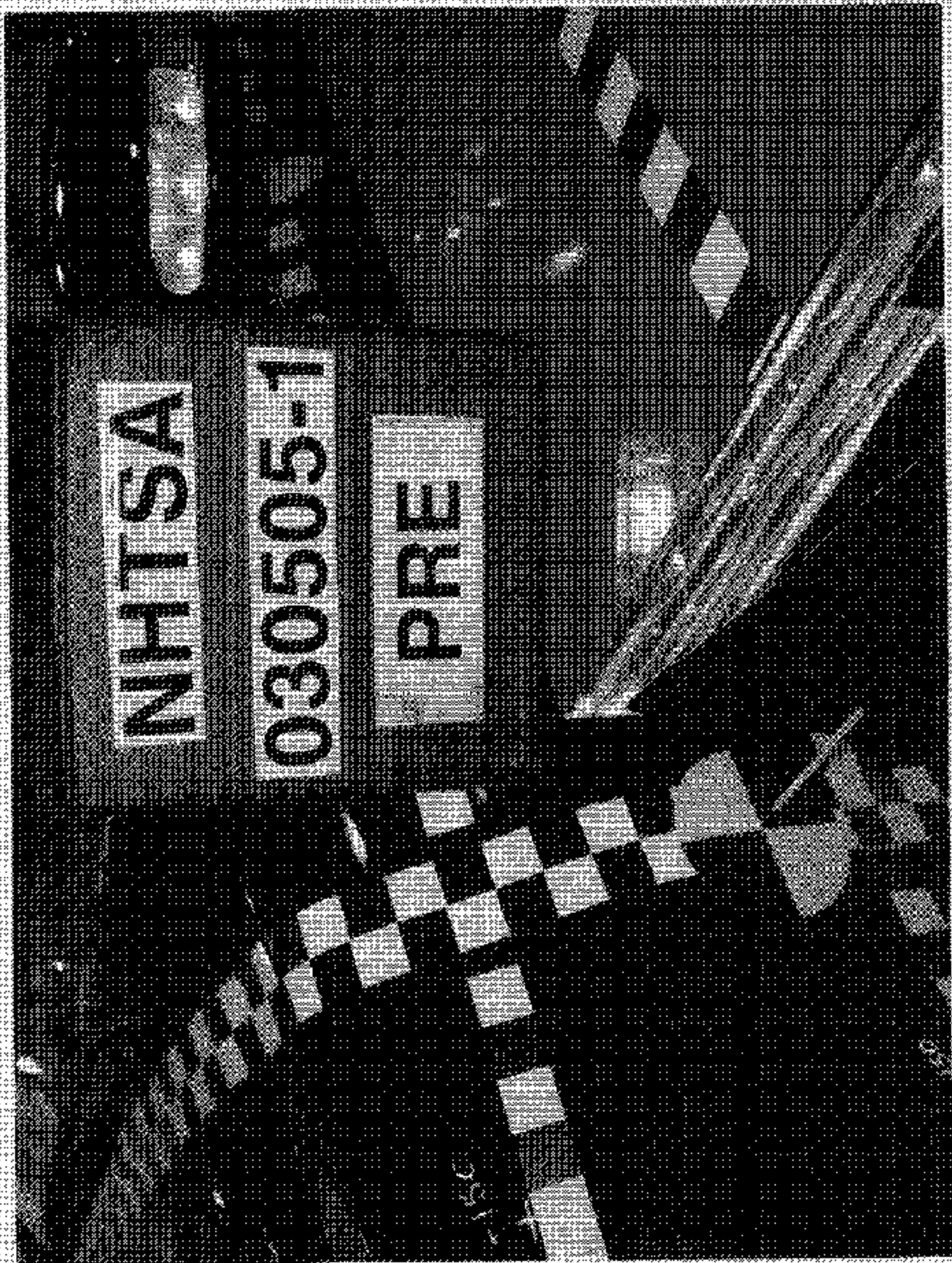


Figure A-44 Pre-Test Primary Impact Point View



Figure A-45 Post-Test Primary Impact Point View

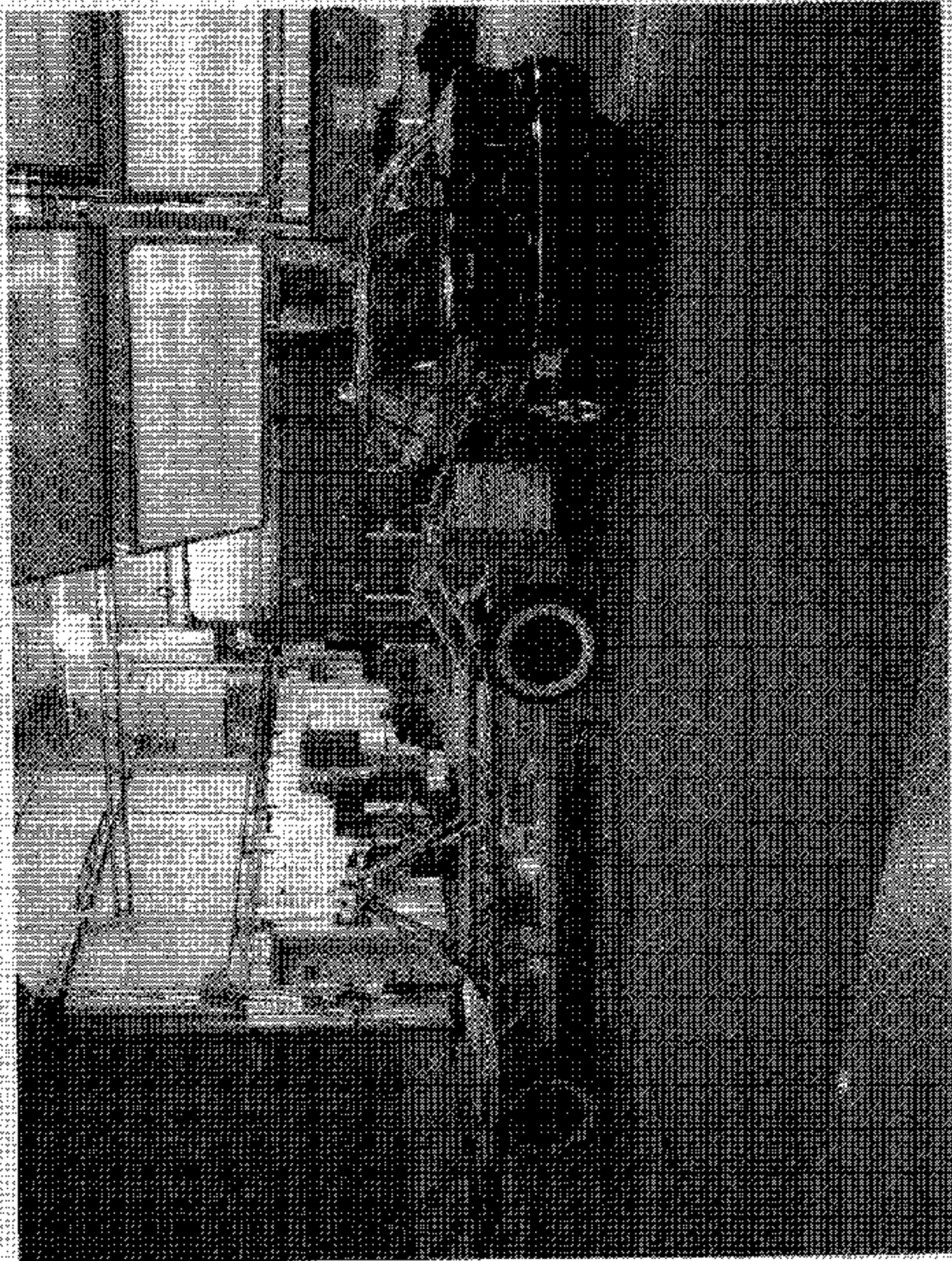


Figure A-46 Pre-Test Right Side View of MDB With Impactor Face in Position



Figure A-47. Pre-Test Secondary Impact Print View

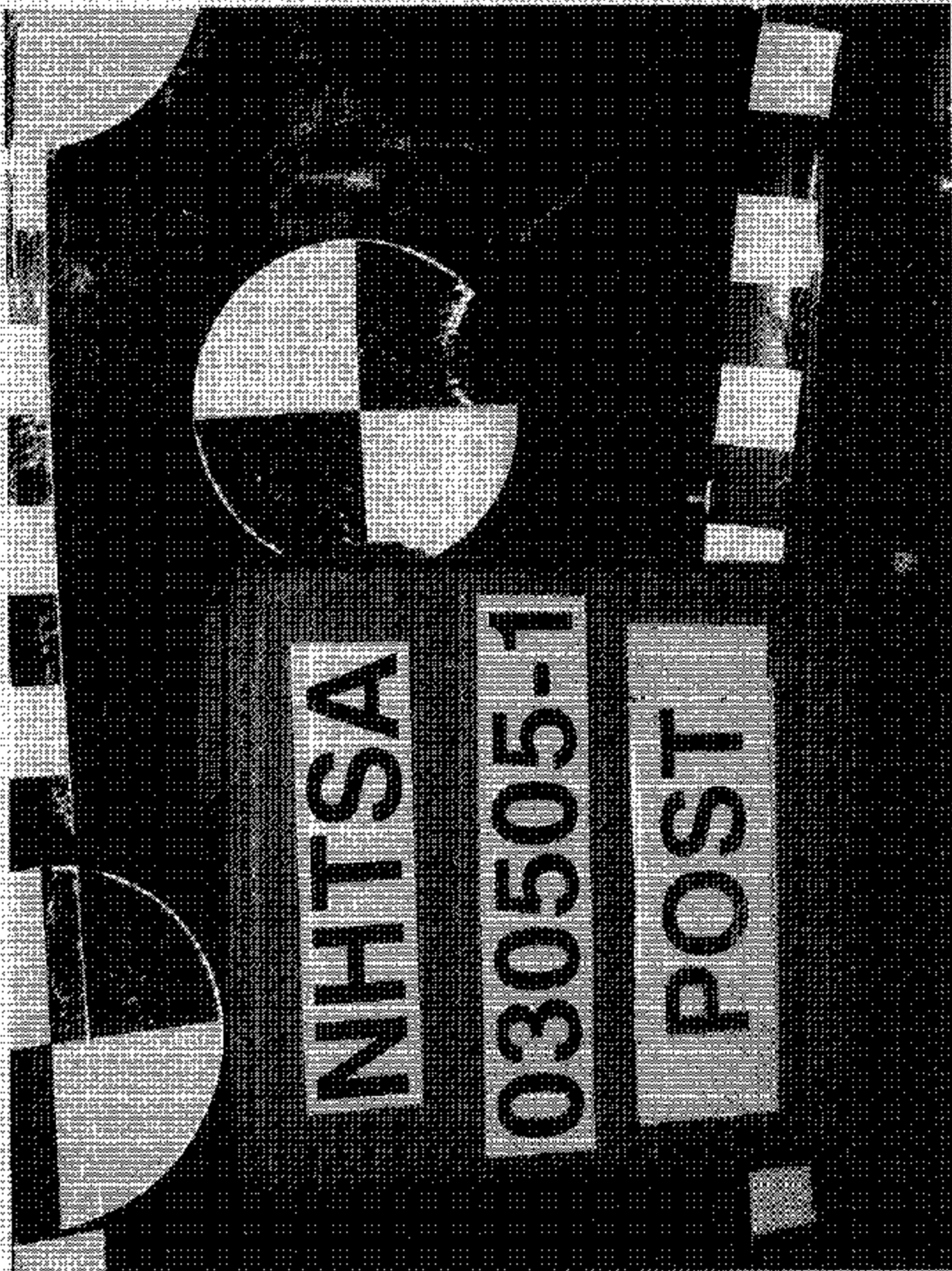


Figure A-48 Post-Test Secondary Impact Point View

MFD BY DAIMLERCHRYSLER AG STUTTGART

KG	LBS	PASSENGER CAR	MADE IN GERMANY (01)
GVWR	1950 4300	THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY REGULATIONS AND THE PREVENTION STANDARDS EFFECTIVE ON THE DATE OF MANUFACTURE SHOWN ON THIS LABEL	
GVWR FRONT	945 2085		
GVWR REAR	1005 2215		

WDBRF61J93A491553

010



Figure A-49 Pre-Test Vehicle Certification Label View

VEHICLE TIRE INFORMATION

VEHICLE CAPACITY WEIGHT

392 KG (865 LBS)

SEATING CAPACITY 5

REAR 3

COLD TIRE PRESSURE

FRONT 28 PSI

RECOMMENDED TIRE SIZE

205/55 R16 91H

SUMMER TIRE

225/50 R16 92V

225/45 R17 91W

225/45 R17 91Y

205/55 R16 91H M&S

WINTER TIRE

FOR ADDITIONAL INFORMATION SEE INSIDE FILLER TIRE COVER AND OWNERS

MANUAL

② A-2035814 29-79

030505-T

Figure A-50. Pre-Test Vehicle Recommended Tire Pressure Label View

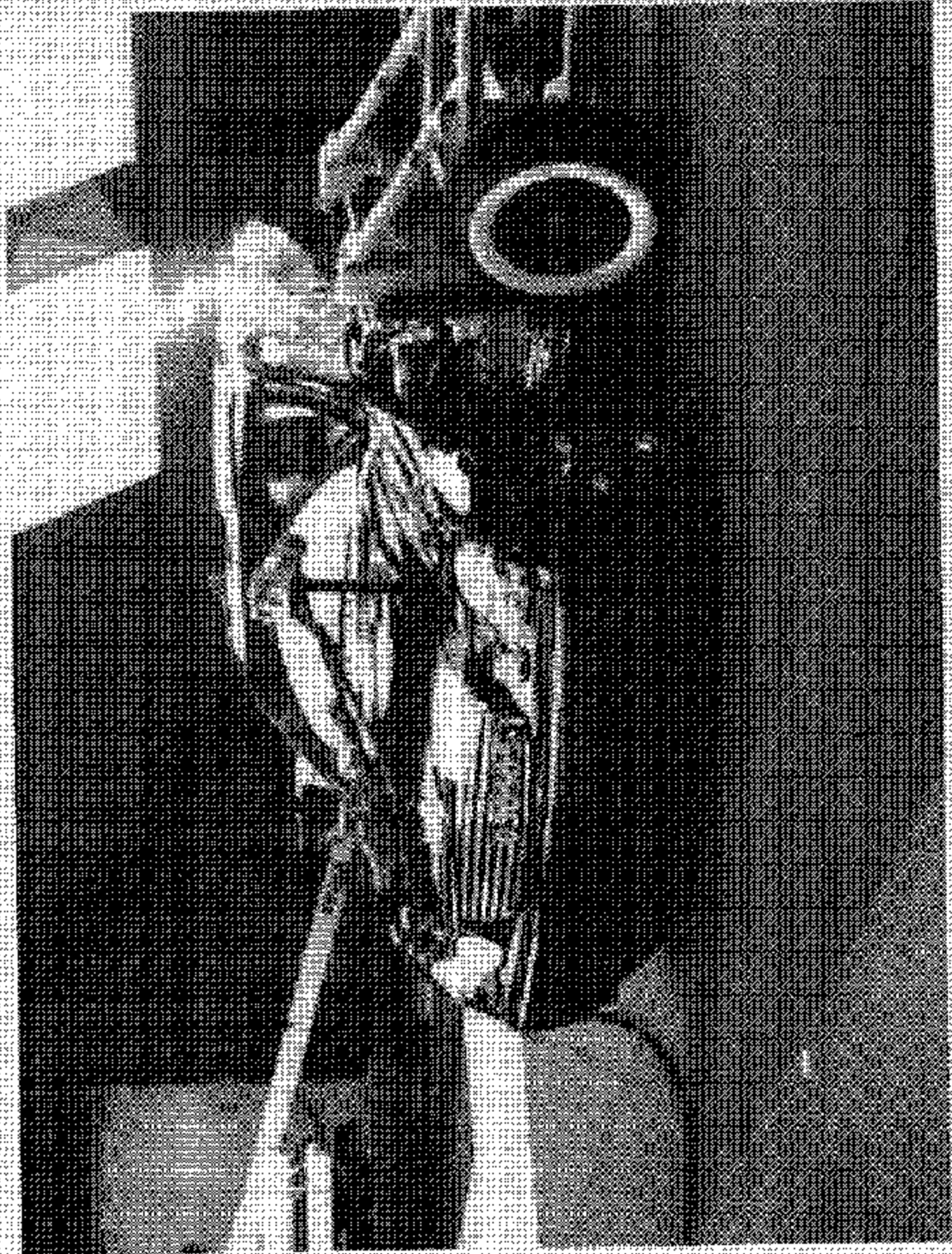


Figure A-51 Impact Event

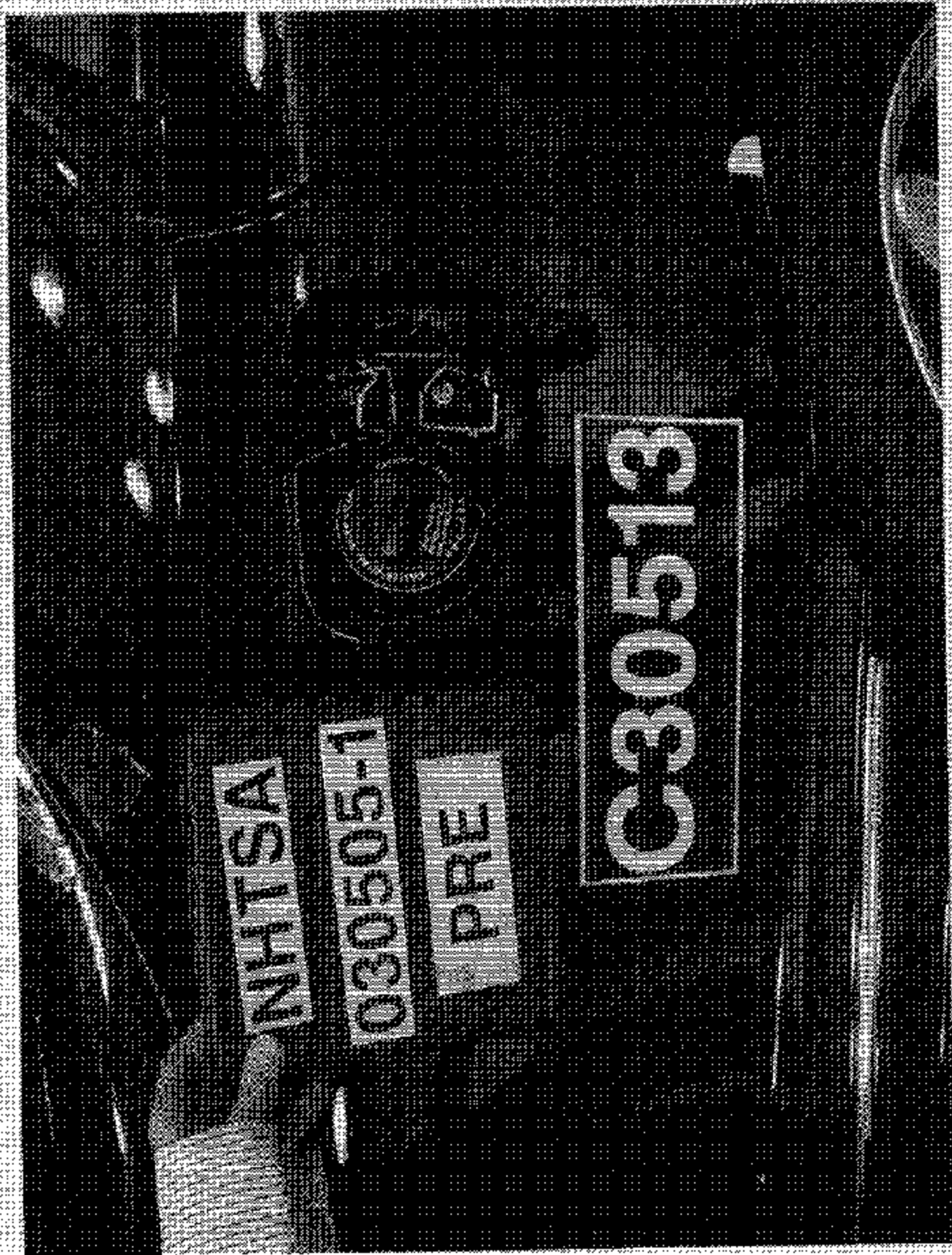


Figure A-52 Pre-Test Fuel Cap

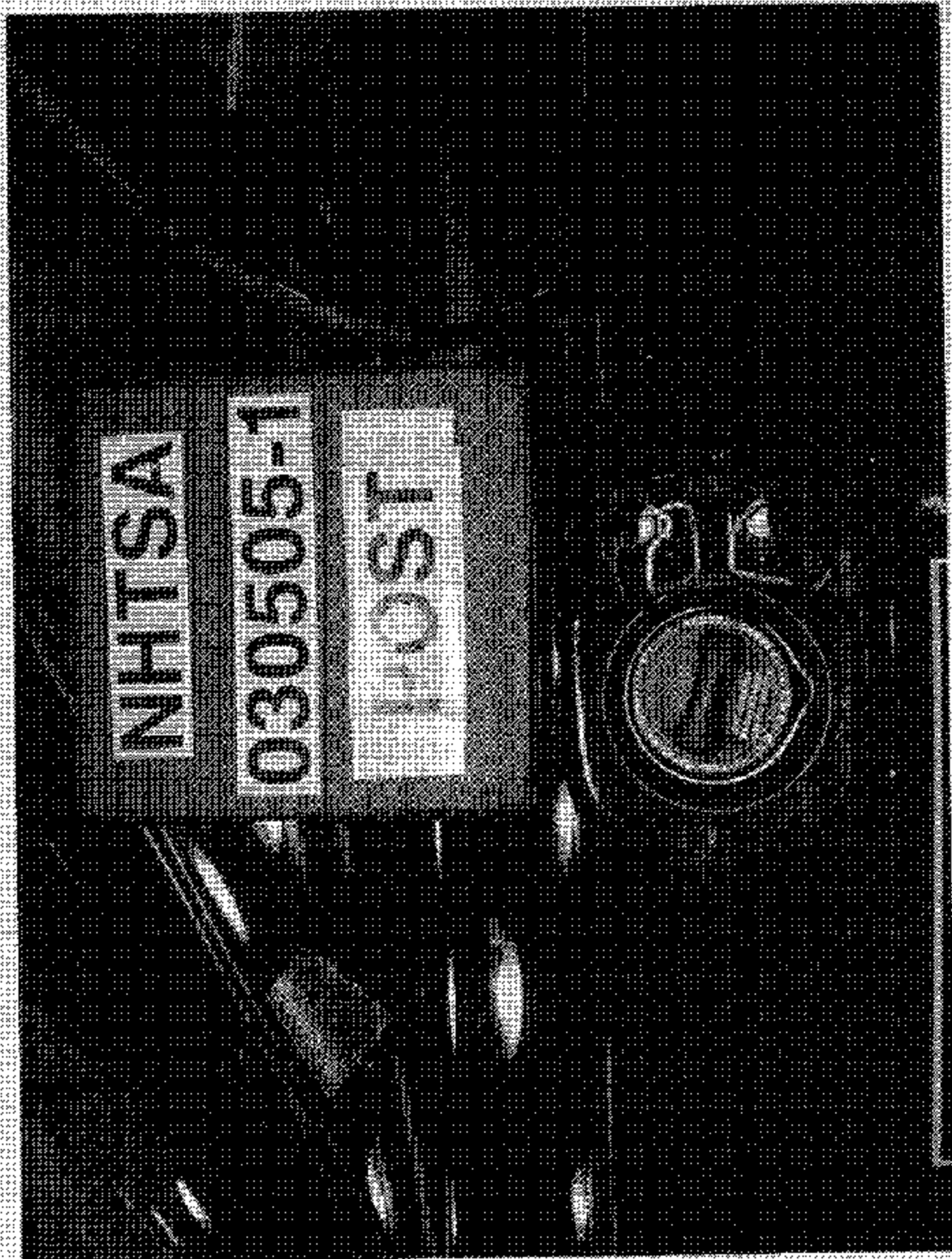


Figure A-53 Post-Test Fuel Cap

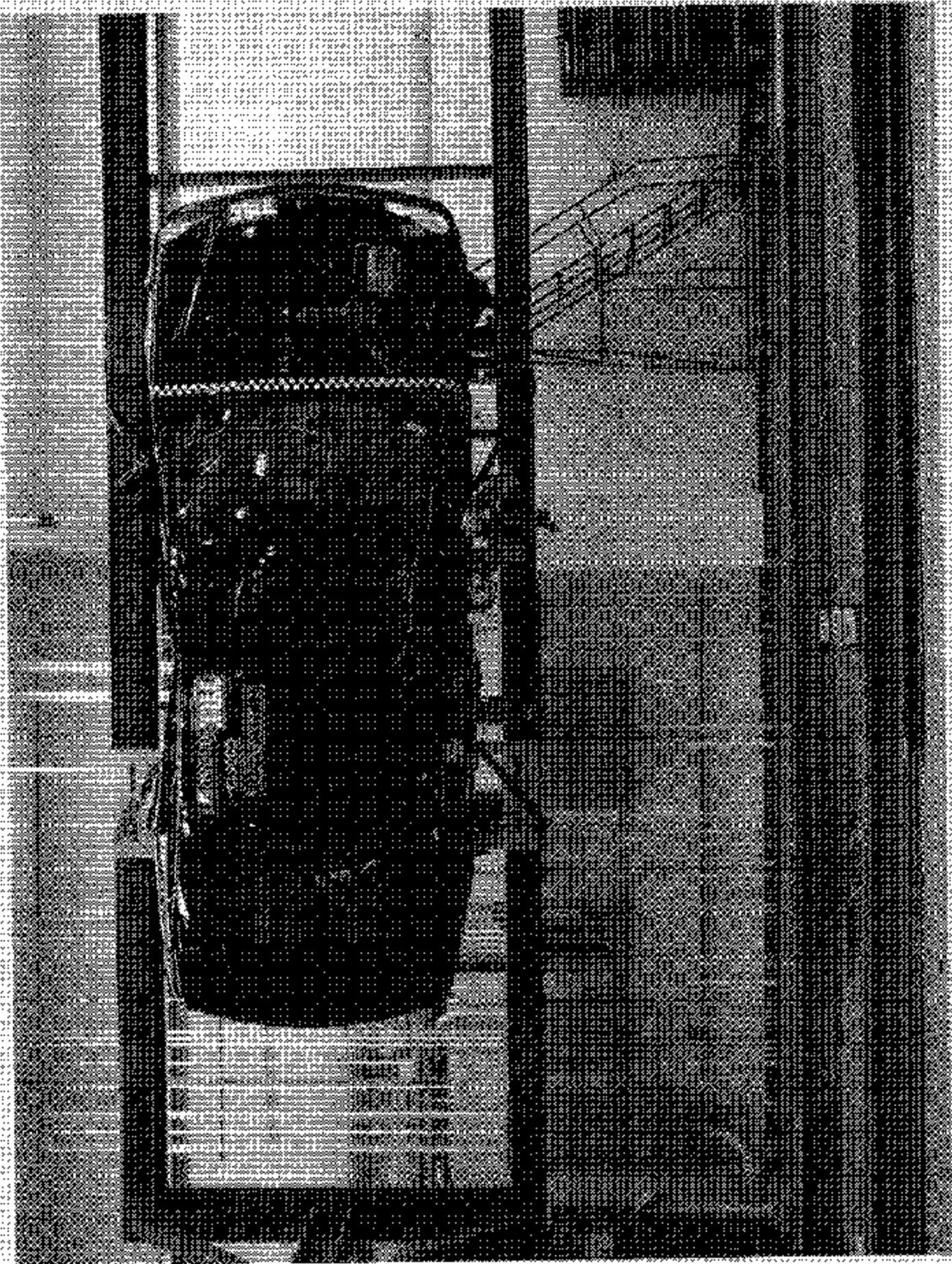


Figure A-54. FMVSS 301 Rollover View at 90°

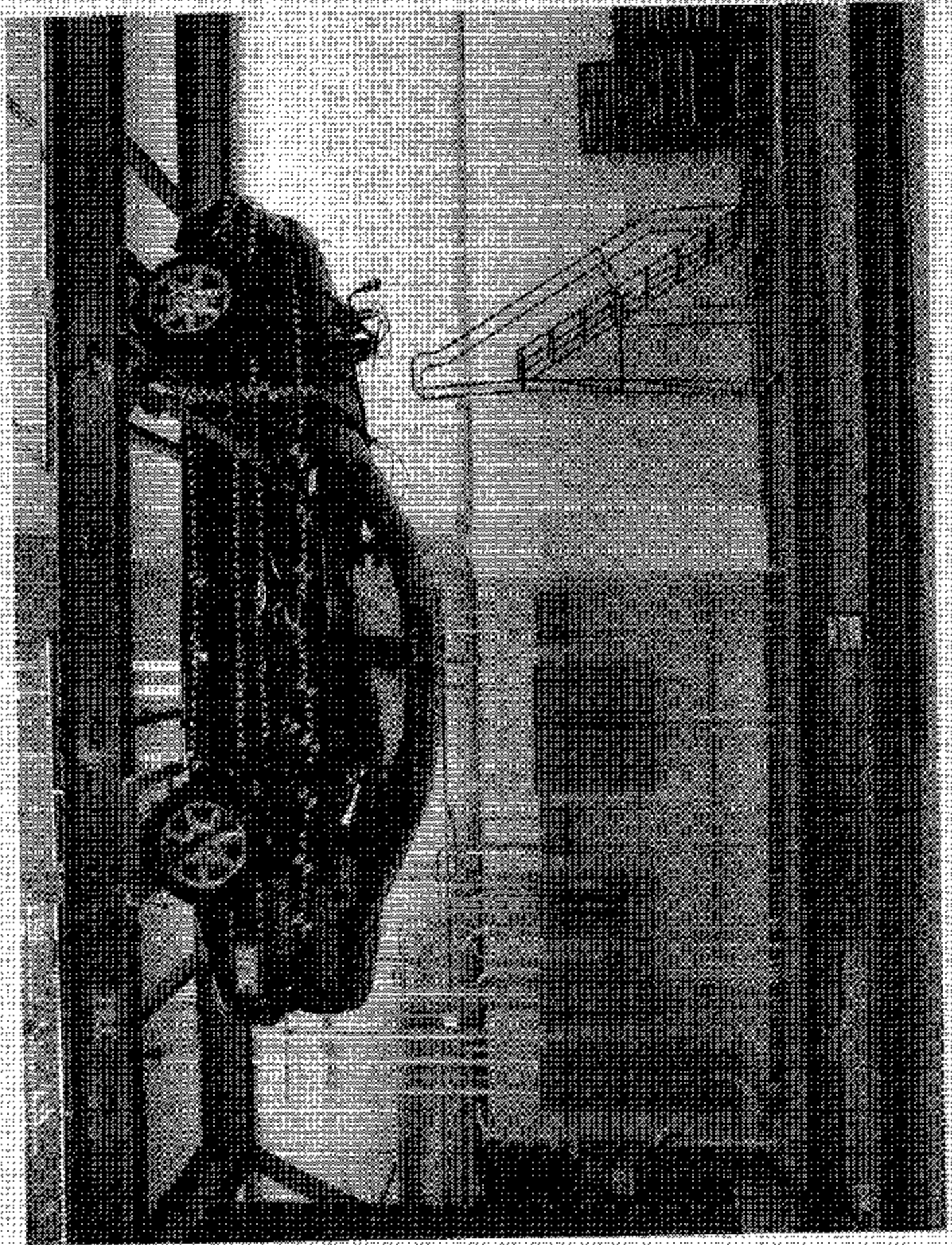


Figure A-55 FMVSS 301 Rollover View at 180°

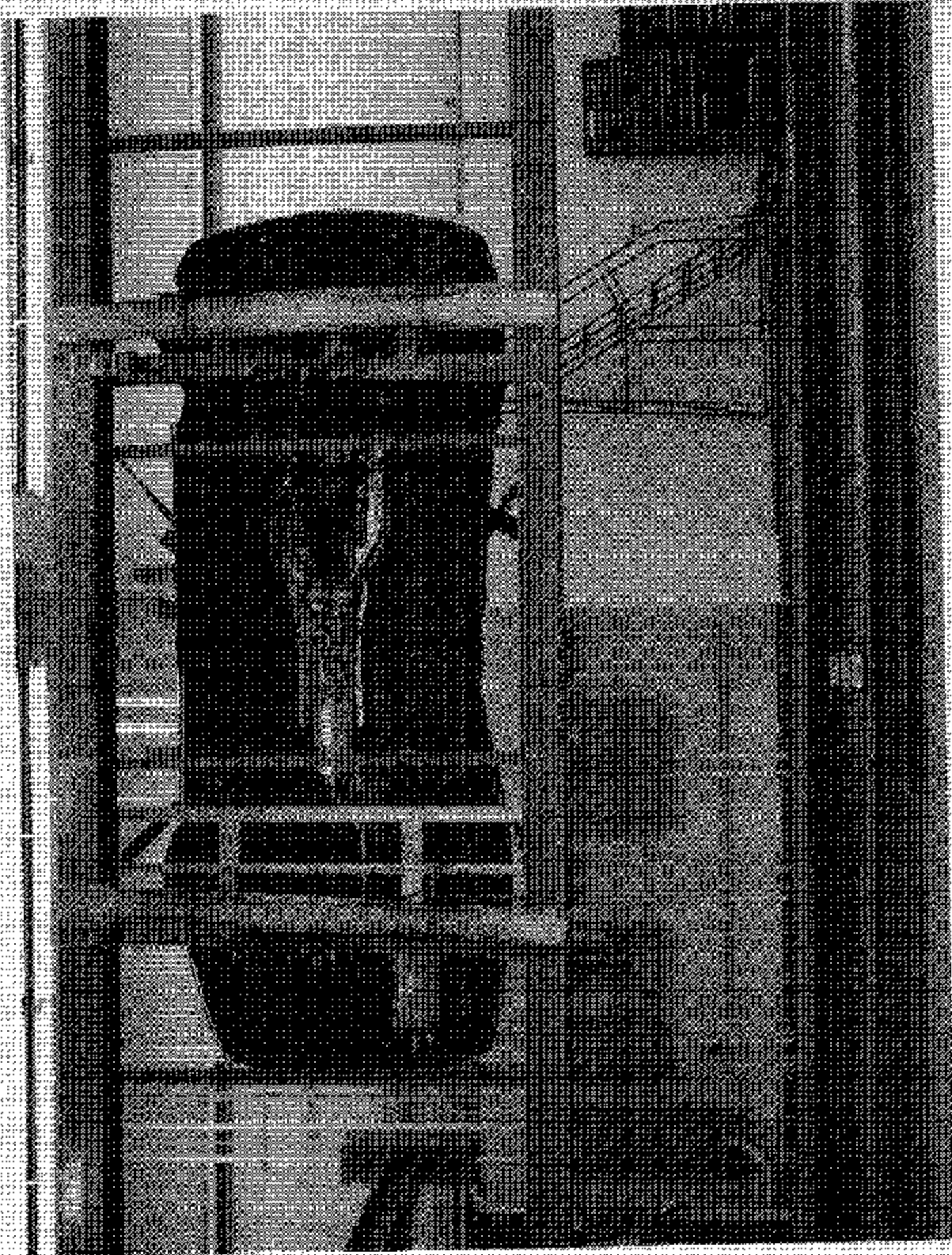


Figure A-56 FMVSS 301 Rollover View at 270°



Figure A-57 FMVSS 301 Rollover View at 360°

Appendix B

Data Plots

Table of Data Plots

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Head X-Axis Acceleration	B-10
2	Driver Head X-Axis Velocity	B-11
3	Driver Head Y-Axis Acceleration	B-12
4	Driver Head Y-Axis Velocity	B-13
5	Driver Head Z-Axis Acceleration	B-14
6	Driver Head Z-Axis Velocity	B-15
7	Driver Head Resultant Acceleration	B-16
8	Driver Neck X-Axis Shear Force	B-17
9	Driver Neck Y-Axis Shear Force	B-18
10	Driver Neck Z-Axis Axial Force	B-19
11	Driver Neck Moment about X Axis	B-20
12	Driver Neck Moment about Y Axis	B-21
13	Driver Neck Moment about Z Axis	B-22
14	Driver Neck Occipital Condyle Moment about X Axis	B-23
15	Driver Upper Rib Y-Axis Acceleration	B-24
16	Driver Upper Rib Y-Axis Velocity	B-25
17	Driver Lower Rib Y-Axis Acceleration	B-26
18	Driver Lower Rib Y-Axis Velocity	B-27
19	Driver Lower Spine Y-Axis Acceleration	B-28
20	Driver Lower Spine Y-Axis Velocity	B-29
21	Driver Pelvis Y-Axis Acceleration	B-30
22	Driver Pelvis Y-Axis Velocity	B-31
23	Driver Shoulder Contact Switch	B-32
24	Driver Pelvis Contact Switch	B-33

Table of Data Plots (Continued)
Driver and Passenger Dummy Instrumentation Plots (Continued)
Acceleration Data - Filter Class 1000
Integration Data - Filter Class 180
Force Data - Filter Class 1000
Moment Data - Filter Class 600
Contact Data - Filter Class 1000

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
25	Left Rear Passenger Head X-Axis Acceleration	B-34
26	Left Rear Passenger Head X-Axis Velocity	B-35
27	Left Rear Passenger Head Y-Axis Acceleration	B-36
28	Left Rear Passenger Head Y-Axis Velocity	B-37
29	Left Rear Passenger Head Z-Axis Acceleration	B-38
30	Left Rear Passenger Head Z-Axis Velocity	B-39
31	Left Rear Passenger Head Resultant Acceleration	B-40
32	Left Rear Passenger Neck X-Axis Shear Force	B-41
33	Left Rear Passenger Neck Y-Axis Shear Force	B-42
34	Left Rear Passenger Neck Z-Axis Axial Force	B-43
35	Left Rear Passenger Neck Moment about X Axis	B-44
36	Left Rear Passenger Neck Moment about Y Axis	B-45
37	Left Rear Passenger Neck Moment about Z Axis	B-46
38	Left Rear Passenger Neck Occipital Condyle Moment about X Axis	B-47
39	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-48
40	Left Rear Passenger Upper Rib Y-Axis Velocity	B-49
41	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-50
42	Left Rear Passenger Lower Rib Y-Axis Velocity	B-51
43	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-52
44	Left Rear Passenger Lower Spine Y-Axis Velocity	B-53
45	Left Rear Passenger Pelvis Y-Axis Acceleration	B-54
46	Left Rear Passenger Pelvis Y-Axis Velocity	B-55
47	Left Rear Passenger Shoulder Contact Switch	B-56
48	Left Rear Passenger Pelvis Contact Switch	B-57

Table of Data Plots (Continued)

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
49	Driver Head X-Axis Redundant Acceleration	B-59
50	Driver Head X-Axis Redundant Velocity	B-60
51	Driver Head Y-Axis Redundant Acceleration	B-61
52	Driver Head Y-Axis Redundant Velocity	B-62
53	Driver Head Z-Axis Redundant Acceleration	B-63
54	Driver Head Z-Axis Redundant Velocity	B-64
55	Driver Head Resultant Redundant Acceleration	B-65
56	Driver Upper Rib Y-Axis Redundant Acceleration	B-66
57	Driver Upper Rib Y-Axis Redundant Velocity	B-67
58	Driver Lower Rib Y-Axis Redundant Acceleration	B-68
59	Driver Lower Rib Y-Axis Redundant Velocity	B-69
60	Driver Lower Spine Y-Axis Redundant Acceleration	B-70
61	Driver Lower Spine Y-Axis Redundant Velocity	B-71
62	Driver Pelvis Y-Axis Redundant Acceleration	B-72
63	Driver Pelvis Y-Axis Redundant Velocity	B-73
64	Left Rear Passenger Head X-Axis Redundant Acceleration	B-74
65	Left Rear Passenger Head X-Axis Redundant Velocity	B-75
66	Left Rear Passenger Head Y-Axis Redundant Acceleration	B-76
67	Left Rear Passenger Head Y-Axis Redundant Velocity	B-77
68	Left Rear Passenger Head Z-Axis Redundant Acceleration	B-78
69	Left Rear Passenger Head Z-Axis Redundant Velocity	B-79
70	Left Rear Passenger Head Resultant Redundant Acceleration	B-80
71	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-81
72	Left Rear Passenger Upper Rib Y-Axis Redundant Velocity	B-82
73	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-83
74	Left Rear Passenger Lower Rib Y-Axis Redundant Velocity	B-84
75	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-85
76	Left Rear Passenger Lower Spine Y-Axis Redundant Velocity	B-86
77	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-87
78	Left Rear Passenger Pelvis Y-Axis Redundant Velocity	B-88

Table of Data Plots (Continued)
Test Vehicle Instrumentation Plots
Acceleration Data - Filter Class 60
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
79	Right Side Sill at Front Seat X-Axis Acceleration	B-90
80	Right Side Sill at Front Seat X-Axis Velocity	B-91
81	Right Side Sill at Front Seat Y-Axis Acceleration	B-92
82	Right Side Sill at Front Seat Y-Axis Velocity	B-93
83	Right Side Sill at Front Seat Z-Axis Acceleration	B-94
84	Right Side Sill at Front Seat Z-Axis Velocity	B-95
85	Right Side Sill at Front Seat Resultant Acceleration	B-96
86	Right Side Sill at Rear Seat X-Axis Acceleration	B-97
87	Right Side Sill at Rear Seat X-Axis Velocity	B-98
88	Right Side Sill at Rear Seat Y-Axis Acceleration	B-99
89	Right Side Sill at Rear Seat Y-Axis Velocity	B-100
90	Right Side Sill at Rear Seat Z-Axis Acceleration	B-101
91	Right Side Sill at Rear Seat Z-Axis Velocity	B-102
92	Right Side Sill at Rear Seat Resultant Acceleration	B-103
93	Rear Floorpan Above Axle X-Axis Acceleration	B-104
94	Rear Floorpan Above Axle X-Axis Velocity	B-105
95	Rear Floorpan Above Axle Y-Axis Acceleration	B-106
96	Rear Floorpan Above Axle Y-Axis Velocity	B-107
97	Rear Floorpan Above Axle Z-Axis Acceleration	B-108
98	Rear Floorpan Above Axle Z-Axis Velocity	B-109
99	Rear Floorpan Above Axle Resultant Acceleration	B-110
100	Left Side Sill at Front Seat Y-Axis Acceleration	B-111
101	Left Side Sill at Front Seat Y-Axis Velocity	B-112
102	Left Side Sill at Front Seat Y-Axis Displacement	B-113
103	Left Side Sill at Rear Seat Y-Axis Acceleration	B-114
104	Left Side Sill at Rear Seat Y-Axis Velocity	B-115
105	Left Side Sill at Rear Seat Y-Axis Displacement	B-116
106	Right Rear Occupant Compartment Y-Axis Acceleration	B-117

Table of Data Plots (Continued)
 Test Vehicle Instrumentation Plots (Continued)
 Acceleration Data - Filter Class 60
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
107	Right Rear Occupant Compartment Y-Axis Velocity	B-118
108	Right Rear Occupant Compartment Y-Axis Displacement	B-119
109	Left Lower A-Post Y-Axis Acceleration	B-120
110	Left Lower A-Post Y-Axis Velocity	B-121
111	Left Middle A-Post Y-Axis Acceleration	B-122
112	Left Middle A-Post Y-Axis Velocity	B-123
113	Left Lower B-Post Y-Axis Acceleration	B-124
114	Left Lower B-Post Y-Axis Velocity	B-125
115	Left Middle B-Post Y-Axis Acceleration	B-126
116	Left Middle B-Post Y-Axis Velocity	B-127
117	Left Front Seat Track Y-Axis Acceleration	B-128
118	Left Front Seat Track Y-Axis Velocity	B-129
119	Left Rear Seat Track Y-Axis Acceleration	B-130
120	Left Rear Seat Track Y-Axis Velocity	B-131
121	Vehicle Center of Gravity X-Axis Acceleration	B-132
122	Vehicle Center of Gravity X-Axis Velocity	B-133
123	Vehicle Center of Gravity Y-Axis Acceleration	B-134
124	Vehicle Center of Gravity Y-Axis Velocity	B-135
125	Vehicle Center of Gravity Z-Axis Acceleration	B-136
126	Vehicle Center of Gravity Z-Axis Velocity	B-137
127	Vehicle Center of Gravity Resultant Acceleration	B-138

Table of Data Plots (Continued)
 MDB Instrumentation Plots
 Acceleration Data - Filter Class 60
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
128	MDB Center of Gravity X-Axis Acceleration	B-140
129	MDB Center of Gravity X-Axis Velocity	B-141
130	MDB Center of Gravity Y-Axis Acceleration	B-142
131	MDB Center of Gravity Y-Axis Velocity	B-143
132	MDB Center of Gravity Z-Axis Acceleration	B-144
133	MDB Center of Gravity Z-Axis Velocity	B-145
134	MDB Center of Gravity Resultant Acceleration	B-146
135	MDB Left Rear X-Axis Acceleration	B-147
136	MDB Left Rear X-Axis Velocity	B-148
137	MDB Left Rear Y-Axis Acceleration	B-149
138	MDB Left Rear Y-Axis Velocity	B-150
139	MDB Right Side Contact Switch	B-151
140	MDB Left Side Contact Switch	B-152

Driver and Passenger Dummy Instrumentation Plots
 Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
141	Driver Upper Rib Y-Axis Acceleration	B-154
142	Driver Lower Rib Y-Axis Acceleration	B-155
143	Driver Lower Spine Y-Axis Acceleration	B-156
144	Driver Pelvis Y-Axis Acceleration	B-157
145	Left Rear Passenger Upper Rib Y-Axis Acceleration	B-158
146	Left Rear Passenger Lower Rib Y-Axis Acceleration	B-159
147	Left Rear Passenger Lower Spine Y-Axis Acceleration	B-160
148	Left Rear Passenger Pelvis Y-Axis Acceleration	B-161

Table of Data Plots (Continued)
 Driver and Passenger Dummy Instrumentation Plots
 Acceleration Data - FIR Filtered - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
149	Driver Upper Rib Y-Axis Redundant Acceleration	B-163
150	Driver Lower Rib Y-Axis Redundant Acceleration	B-164
151	Driver Lower Spine Y-Axis Redundant Acceleration	B-165
152	Driver Pelvis Y-Axis Redundant Acceleration	B-166
153	Left Rear Passenger Upper Rib Y-Axis Redundant Acceleration	B-167
154	Left Rear Passenger Lower Rib Y-Axis Redundant Acceleration	B-168
155	Left Rear Passenger Lower Spine Y-Axis Redundant Acceleration	B-169
156	Left Rear Passenger Pelvis Y-Axis Redundant Acceleration	B-170

Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000

Integration Data - Filter Class 180

Force Data - Filter Class 1000

Moment Data - Filter Class 600

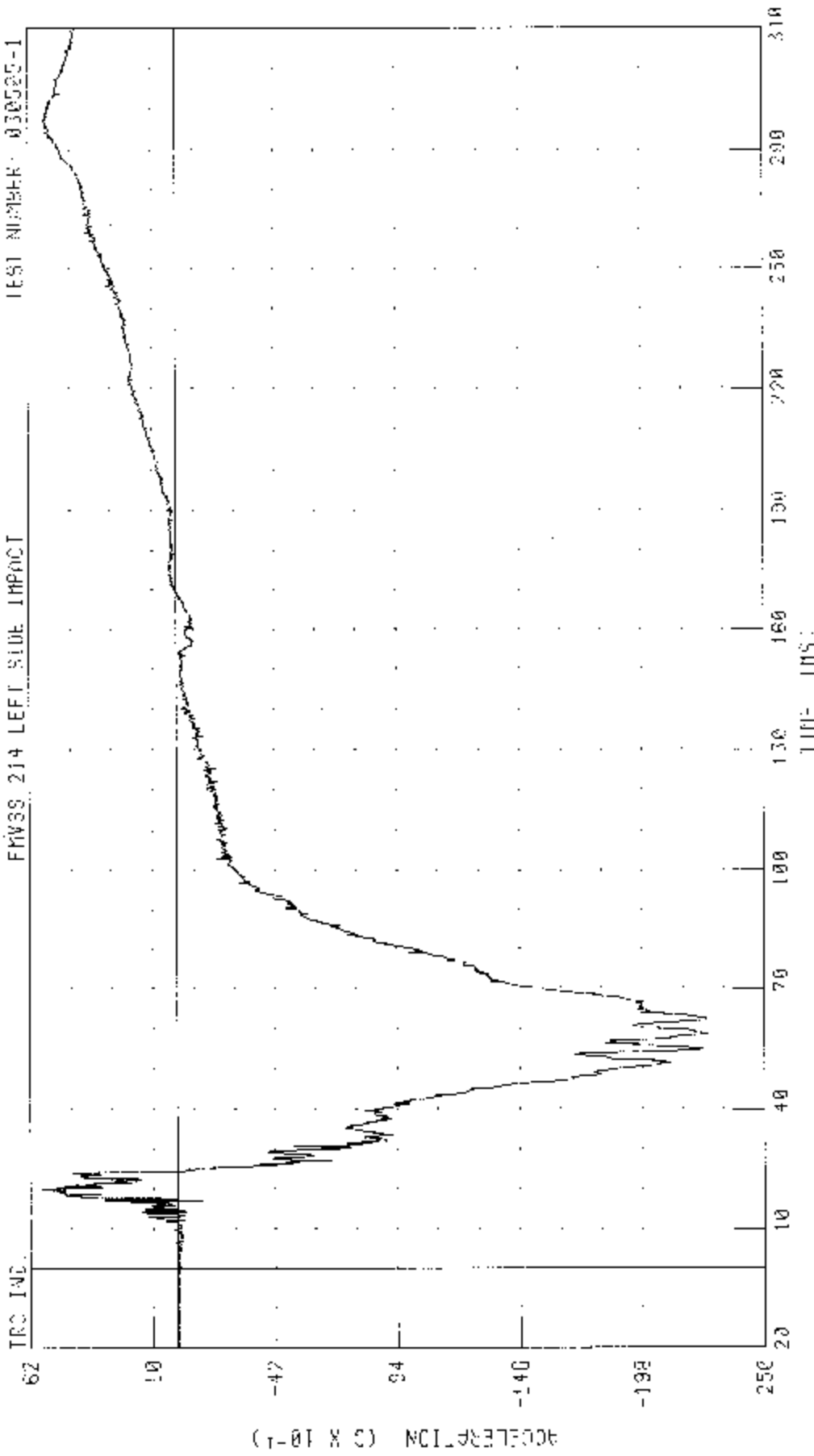
Contact Data - Filter Class 1000

55X28 KPII 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD X-AXIS ACCELERATION

FRV35 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



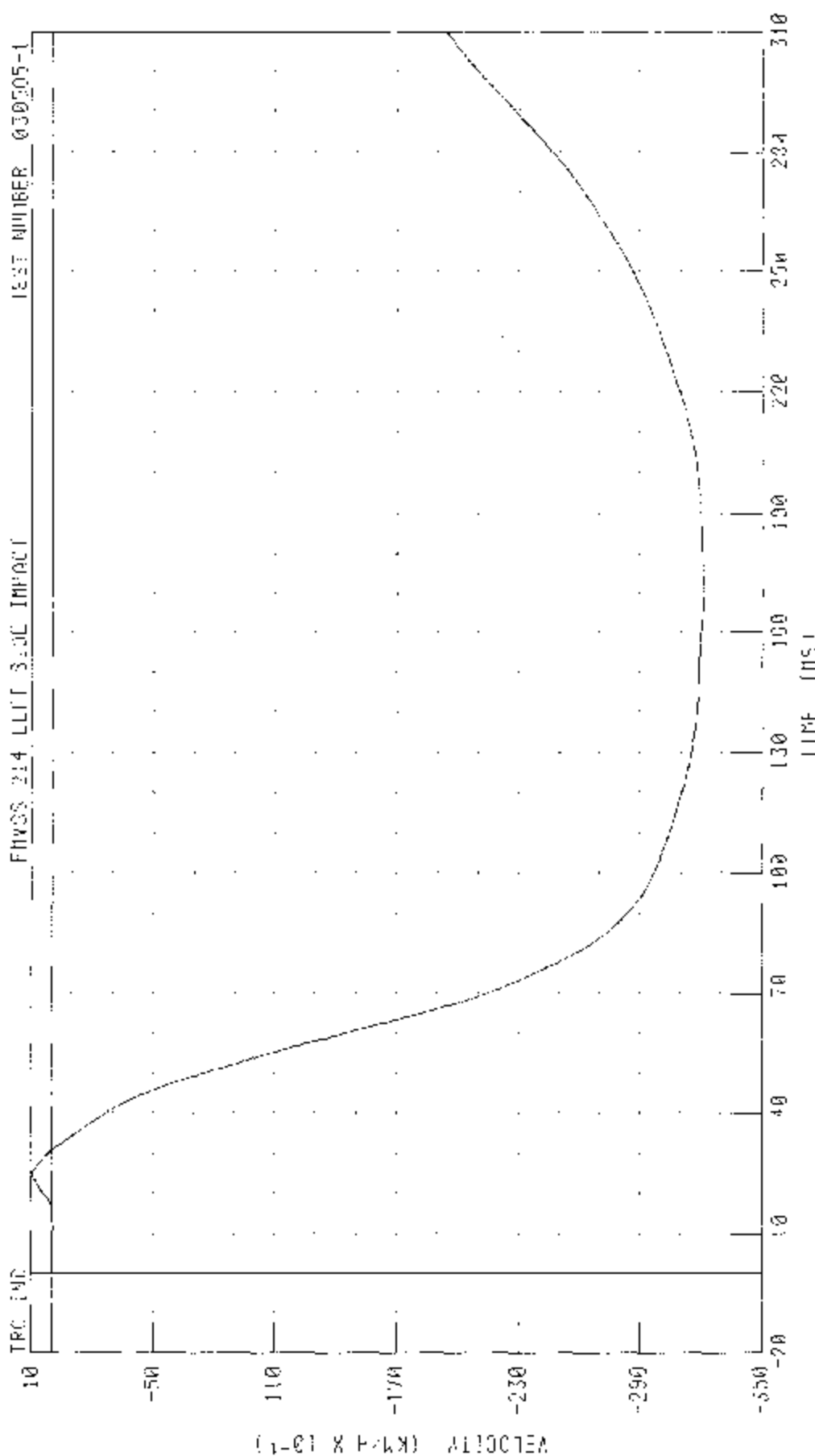
CHANNEL1 HFDX01 FILTER: CH GLASS 10KHZ

PEAK DATA: 72.5 @ 20.08 MS, -22.79 G @ 58.43 MS

55/28 MPH SW DEURPS SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2400 MERIDIAN-BEN7 C242

DRIVER FPEE 3-90LS VELOCITY

FWQS 214 LEFT SIDE IMPACT TEST NUMBER 030505-1



TIME (MS)

CHANNEL (DEUX) FILTER: CH. CLASS 100

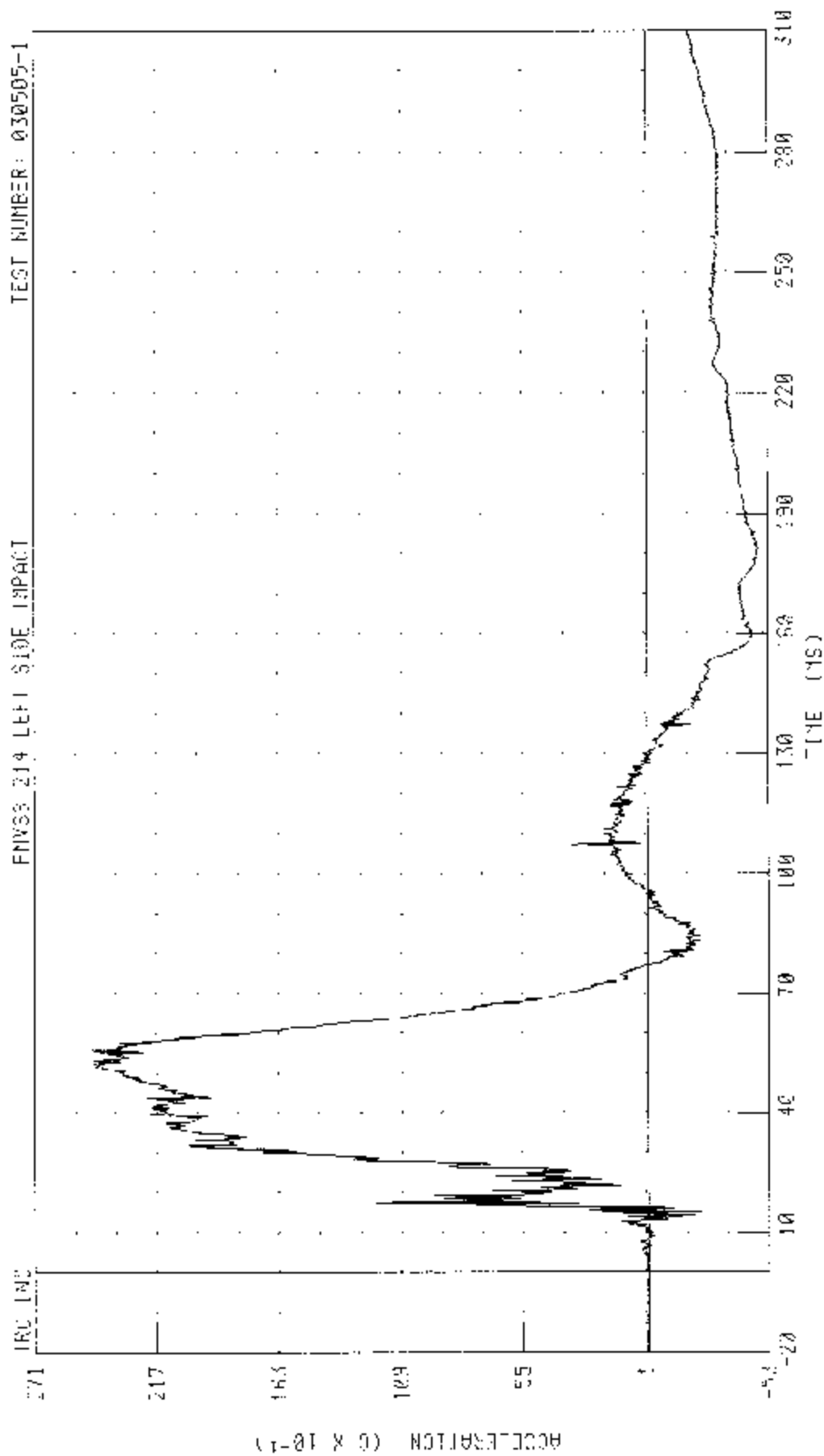
PEAK DATA 0.97 KM/H @ 24.90 MS: -52.16 KM/H @ 169.60 MS

55/28 MPH 90 DEGREE SIDE IMPACT (MOVING OFFSHOULDER BARRIER) INTO LEFT SIDE OF 2003 MERCEDES BEVZ L240

DRIVER HEAD Y-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



CHANNEL: HEADY31 FILTER: 300 CLASS: 1500

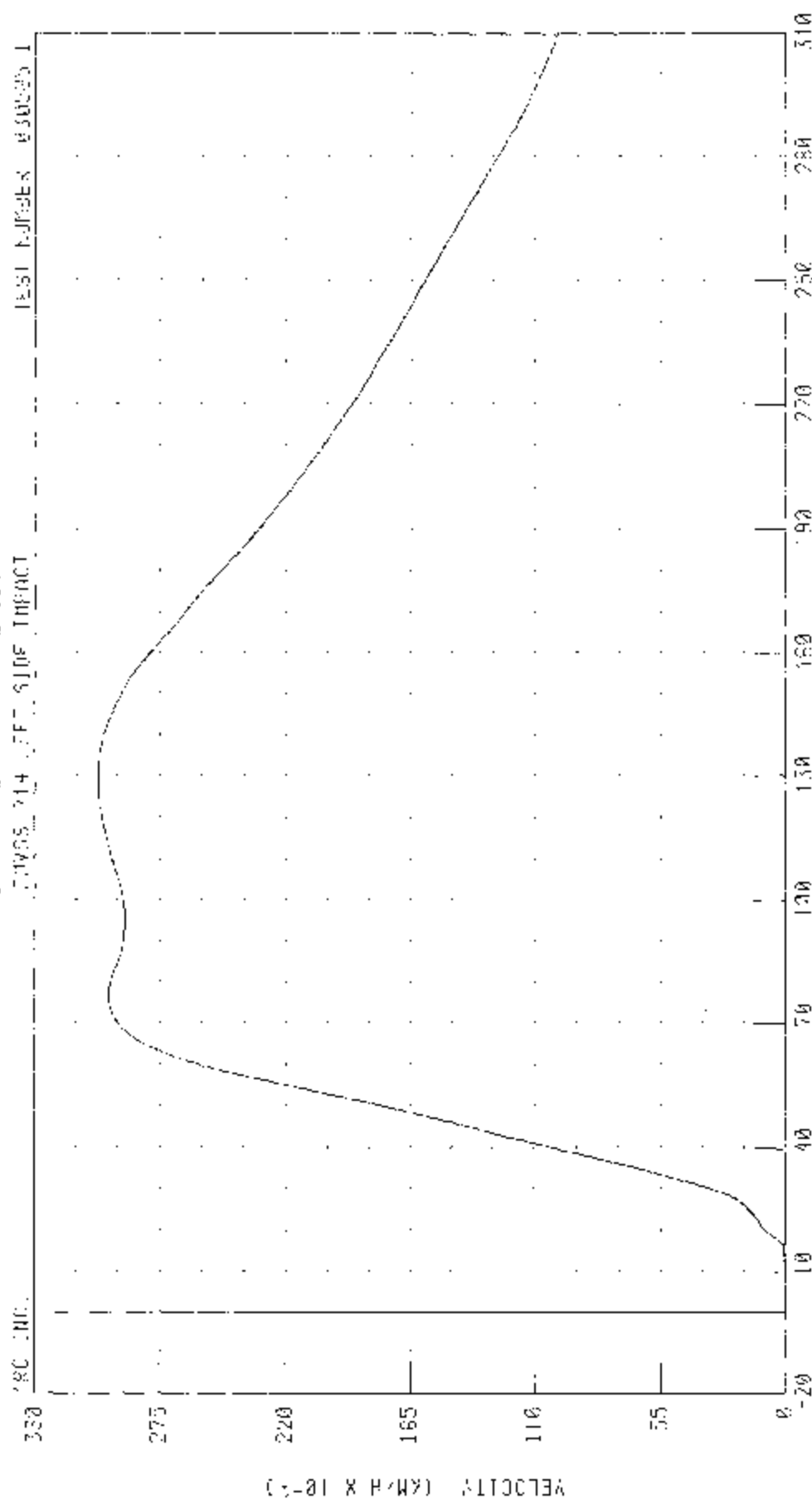
PEAK: 0974 24 59 0 0 55 84 MS: -4 88 0 0 131 44 MS

55/28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INIT OFF SIDE OF 2803 MERCEDES-BENZ C240

DRIVER HEAD Y-AXIS VELOCITY

CYCLE 214 OFF SIDE IMPACT

TEST NUMBER 850025 I



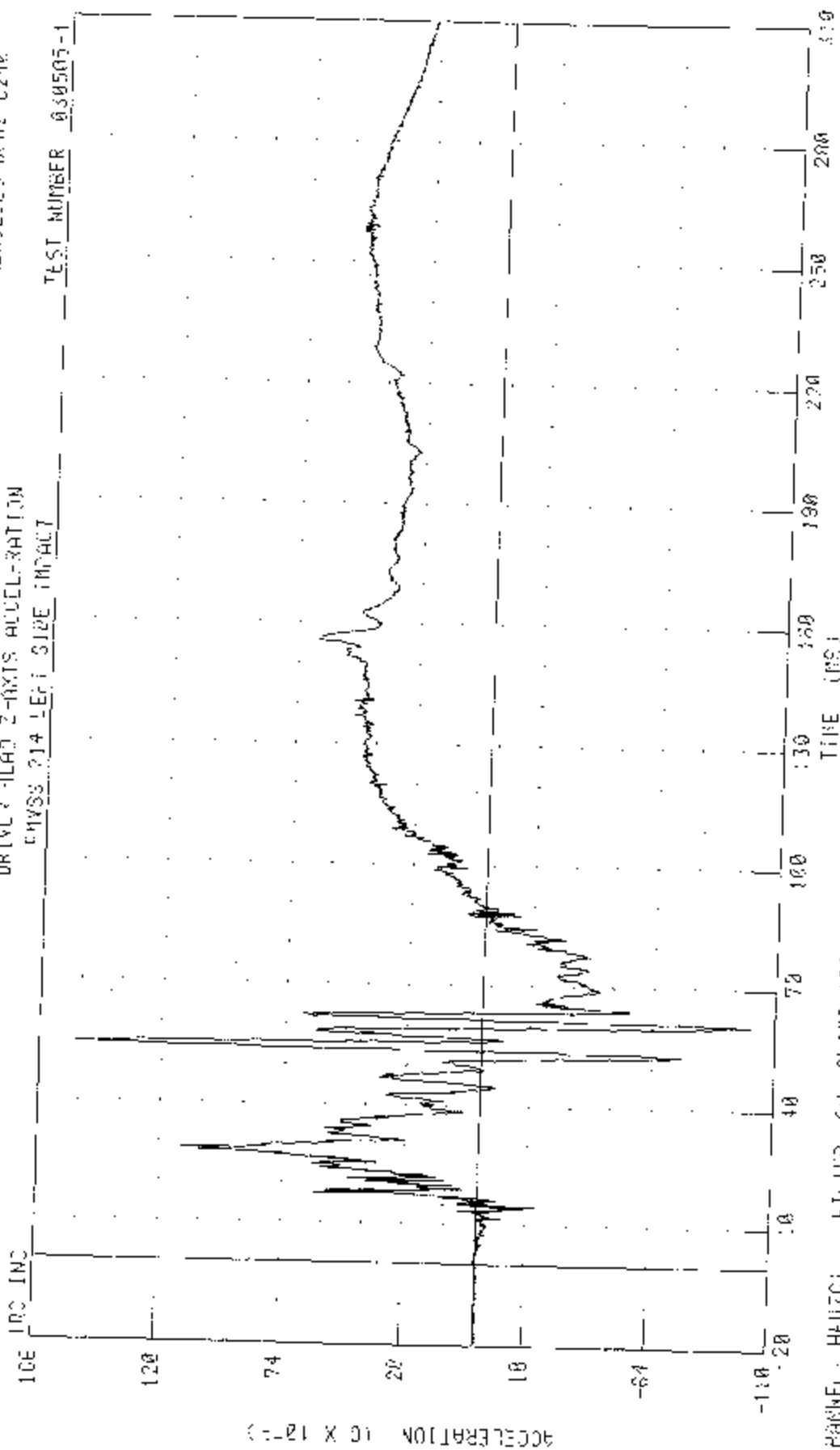
TIME (MS)

CHANNEL- HEAD-Y1 FILTER CH CLOS 130

OFFER DATA 50.12 KPH @ 120.48 MS 9 DE KPH @ 0 MS

55/28 KPP 90 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER, INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240
 DRIVER HEAD Z-AXIS ACCELERATION
 CHVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030505-1



CHANNEL: H0701 F0112 CR CLASS 1000

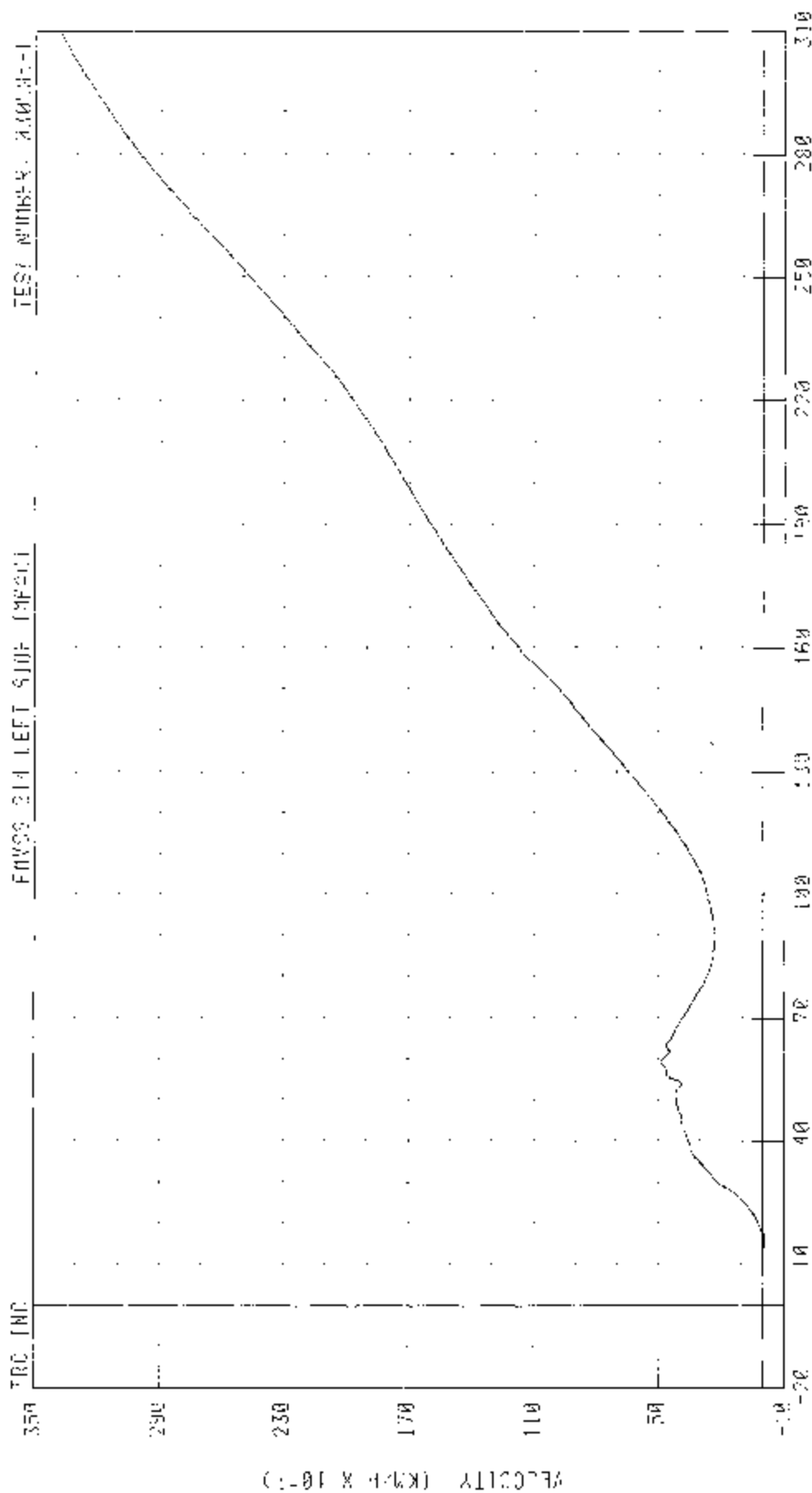
SEPP DATE: 15 24 0 54 34 MS. 10.02 G 0 50 04 MS

55/28 KPH 9R VEHICLE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INW LEFT SIDE W- 2005 MERCEDES-BENZ C240

DRIVER HEAD Z-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 4404-01-1



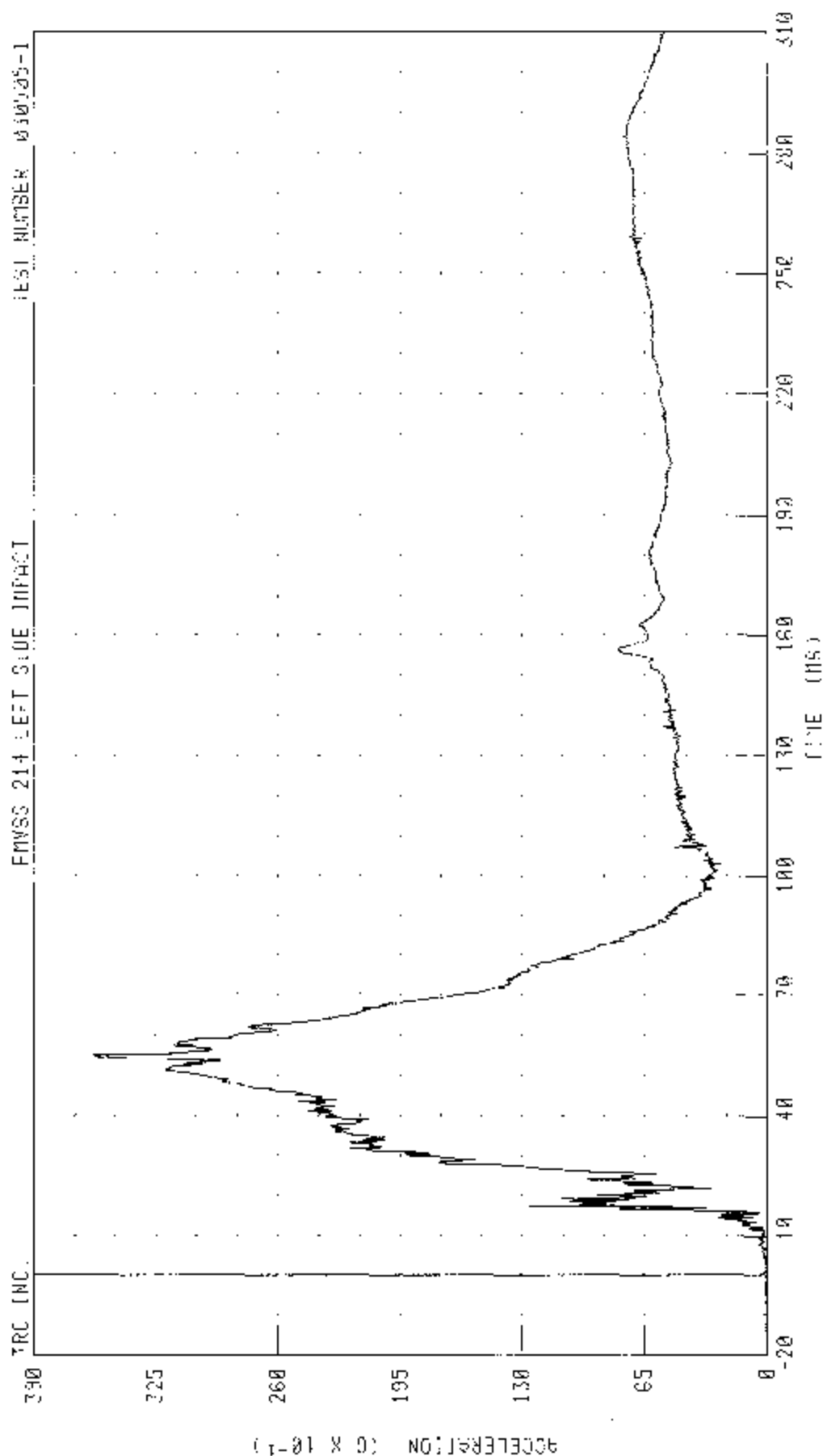
TIME (MS)

CHANNEL: HF72V1 FILTER: CH CLASS: 130

PEAK DATA: 33.88 KPH W- 319.00 MS, 0.88 VIV4 & 10.92 MS

55/28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD RESULTANT ACCELERATION



TEST NUMBER 030505-1

FMVSS 214 LEFT SIDE IMPACT

CHANNEL: HILDCI FILTER: 01 CLASS: 1000

PLAK DATA 55 04 00 55 04 MS 0.01 00 10.00 MS

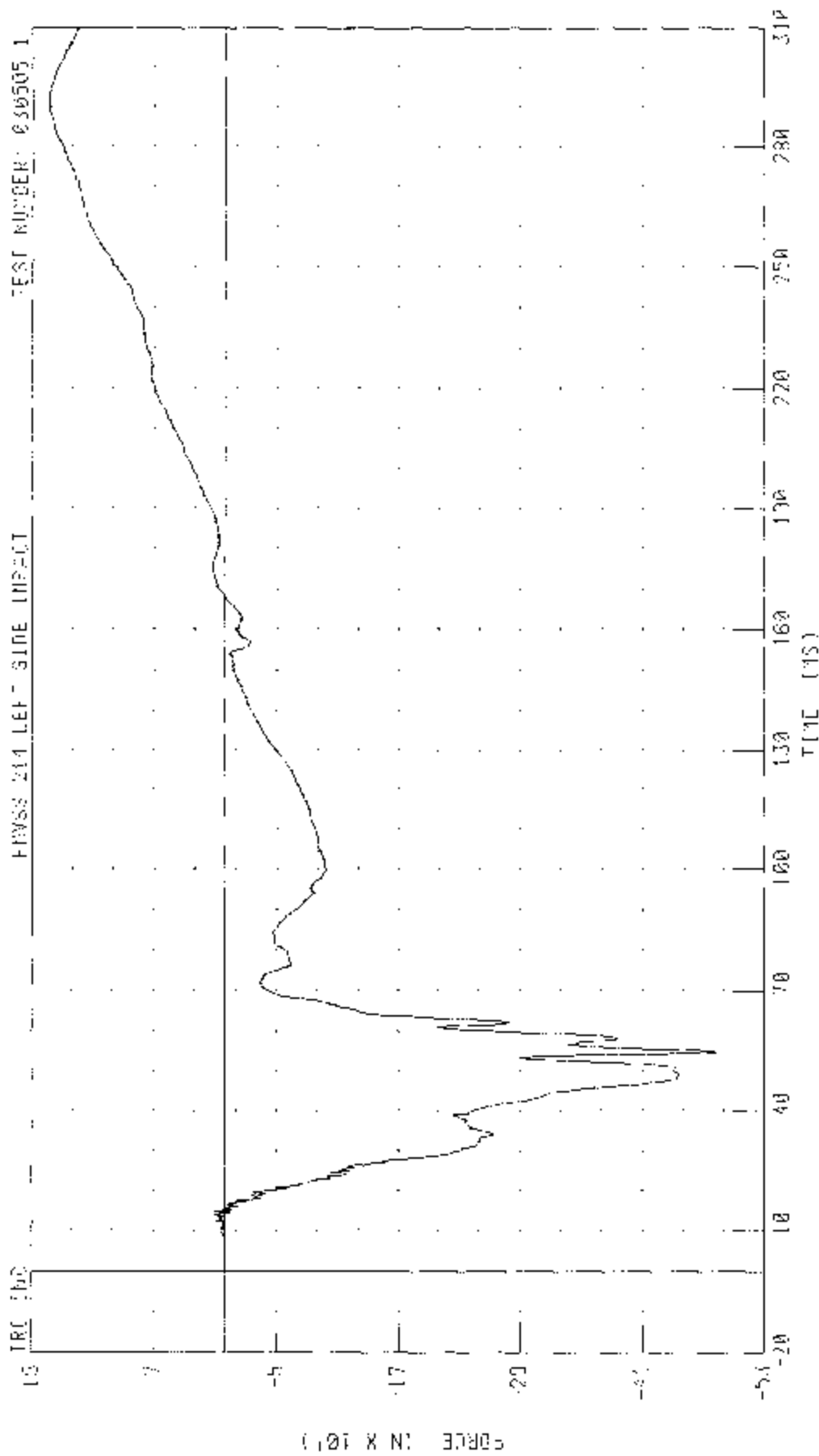
ACCELERATION ($g \times 10^{-1}$)

030505-1

B-16

55 MPH 90 DEGREE SIDE IMPACT (MOVING ALFURNABLE BARRIER) INTO LEFT SIDE OF 2000 MERIDIAN-S-BENT C240

DRIVER REAR X-AXIS SHEAR FORCE



CHARTER: 167KAF: FILTER: CH: C: 055: 0002

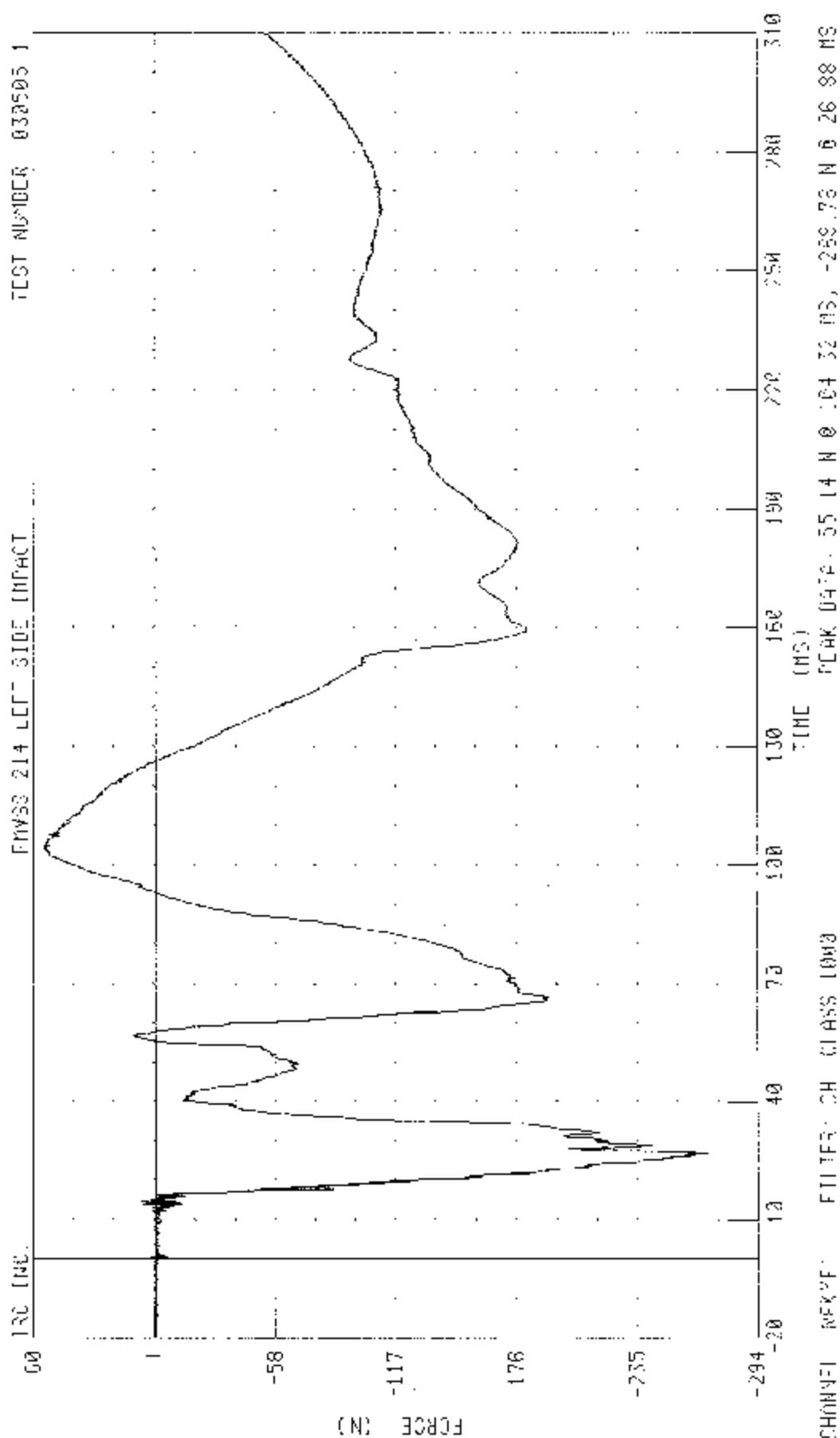
DATE: 00/00 174 20 N 0 201 50 MS. 402 21 N 0 54 06 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK Y-AXIS SHEAR FORCE

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030505-1



CHANNEL: NECK Y-AXIS FILTER: CH CLASS: 1000

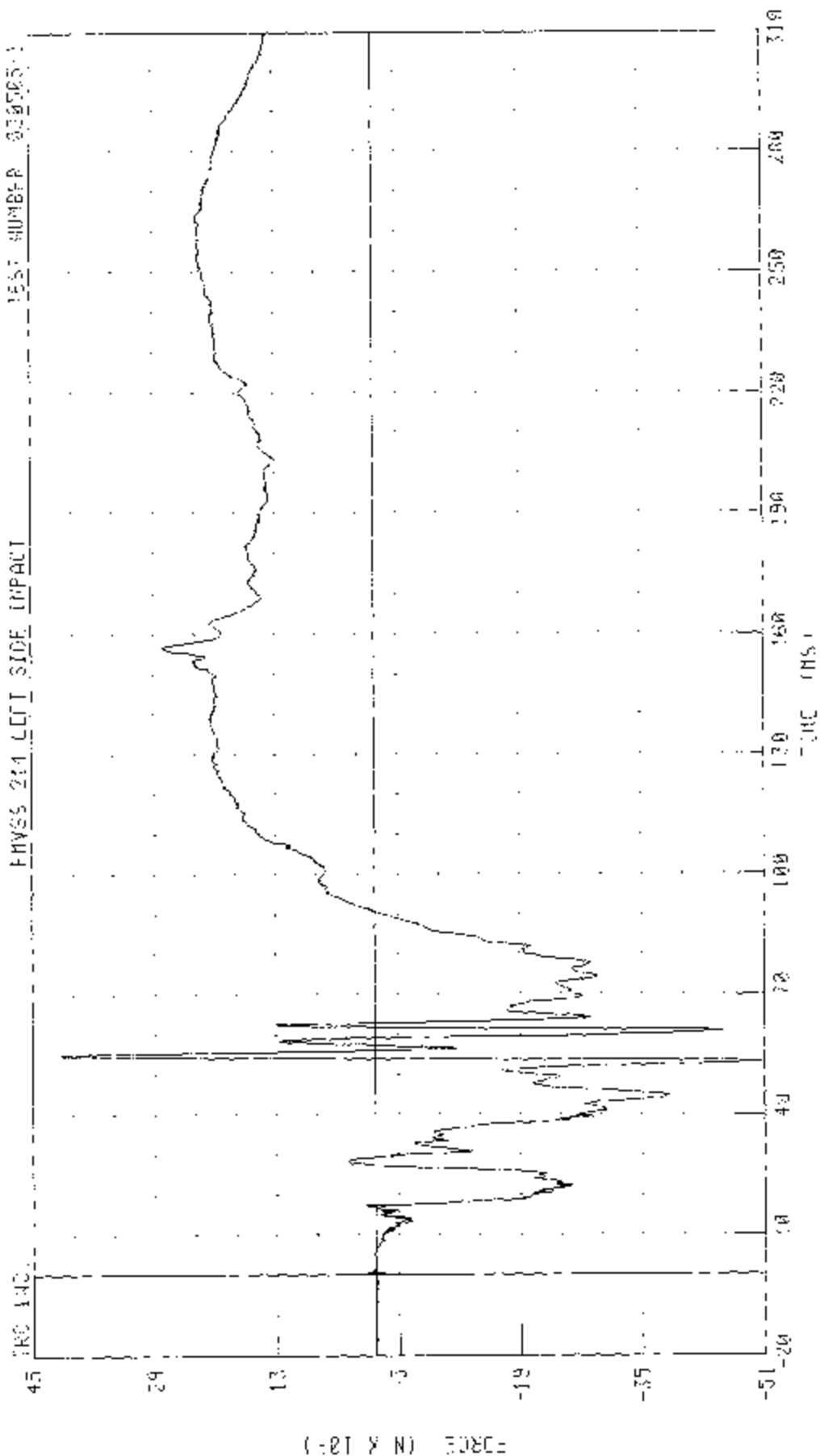
TIME (ms)

PEAK DATA: 55 14 N @ 104 32 MS, -258.78 N @ 26 88 MS

55/28 PM 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2000 HURRICANES-04VZ 0240

DRIVER SEAT Z-AXIS CYCLIC FORCE

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER 030505-1



CHANNEL: NRZCF1 FILTER: CH CLASS: 1000

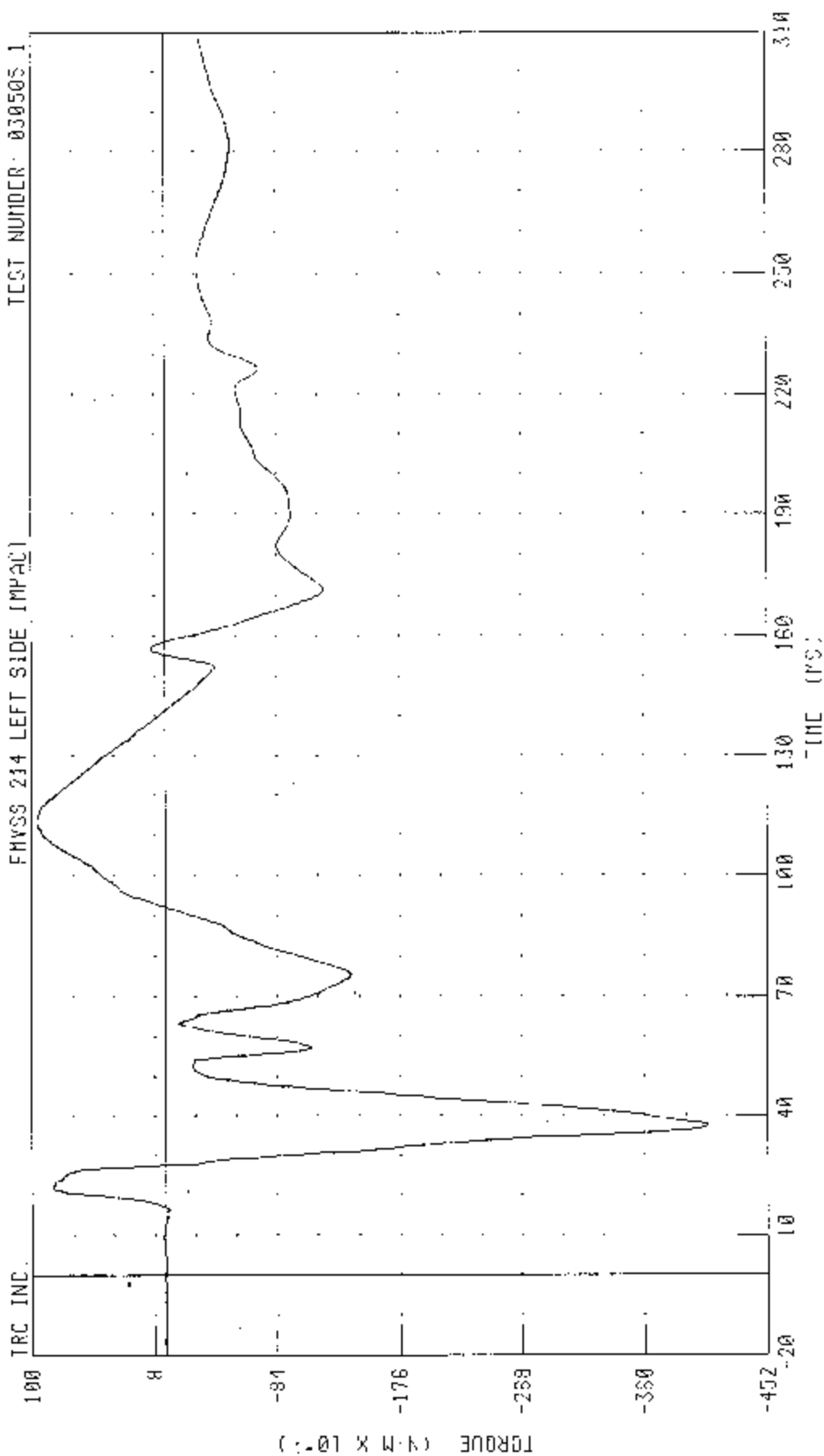
PMV: 0410 410 60 H @ 50 95 100 1004 30 H @ 53 78 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK MOMENT ABOUT X AXIS

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



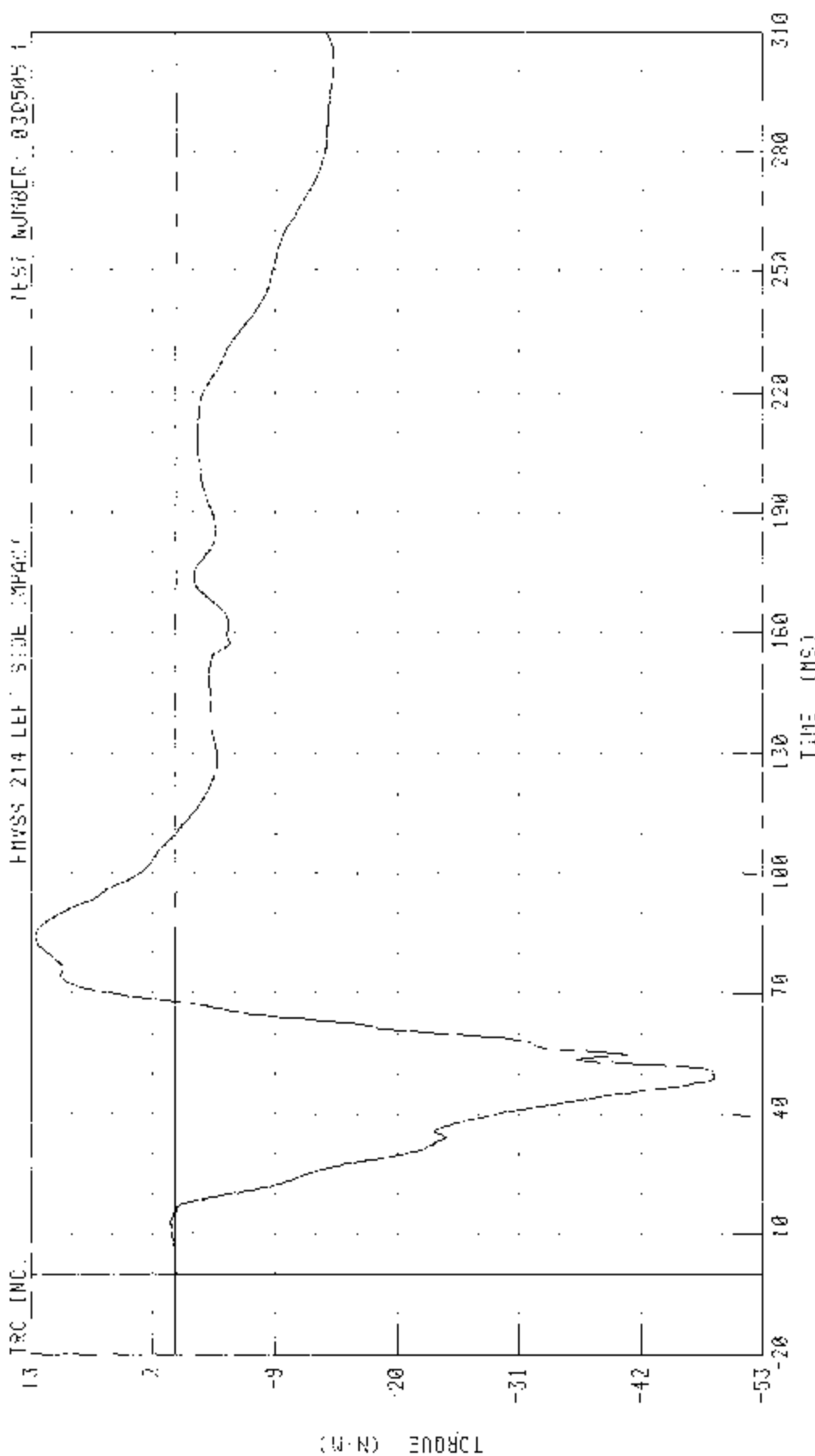
PEAK DATA: Y 63 N M W 115 84 MS, -40 68 N M W 37 52 MS

CHANNEL NECKM1 FILTER CH. CLASS 600

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER NECK MOMENT ABOUT Z AXIS

FWWS 214 LEFT SIDE IMPACT TEST NUMBER: 030505-1



CHANNEL: NECK-M1 FILTER: CH CLASS: 600 PEAK DATA: 12.00 N X 0.0410 MS, 40.50 N Y 0.44 MS

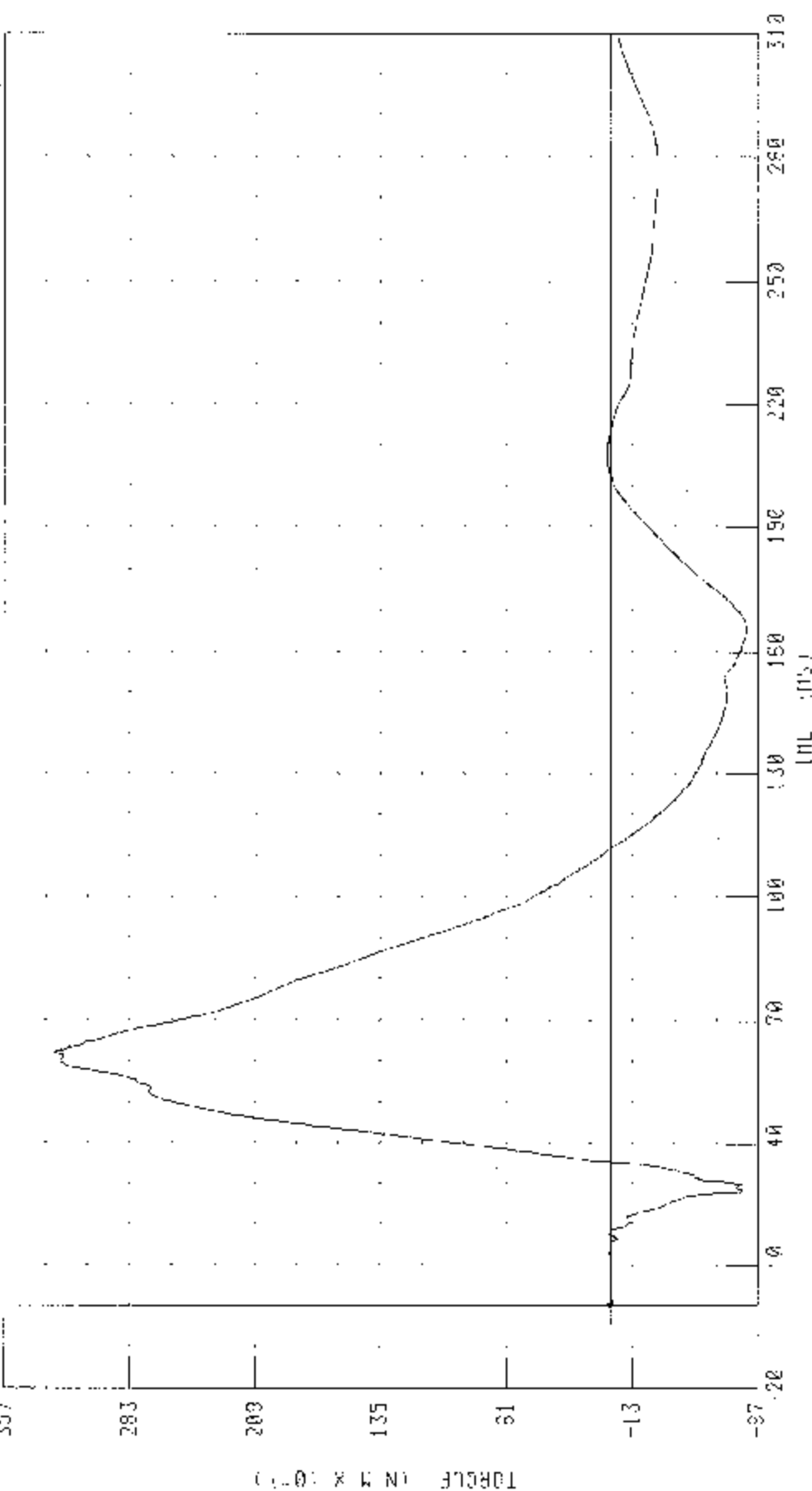
55/26 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 PERCELOS-HEN7 T240

DRIVER NECK MOMENT ABOUT Z AXIS

FMVSS 2.4 LEFT SIDE IMPACT

IRC INC

TEST NUMBER: 030505-1



INL (MS)

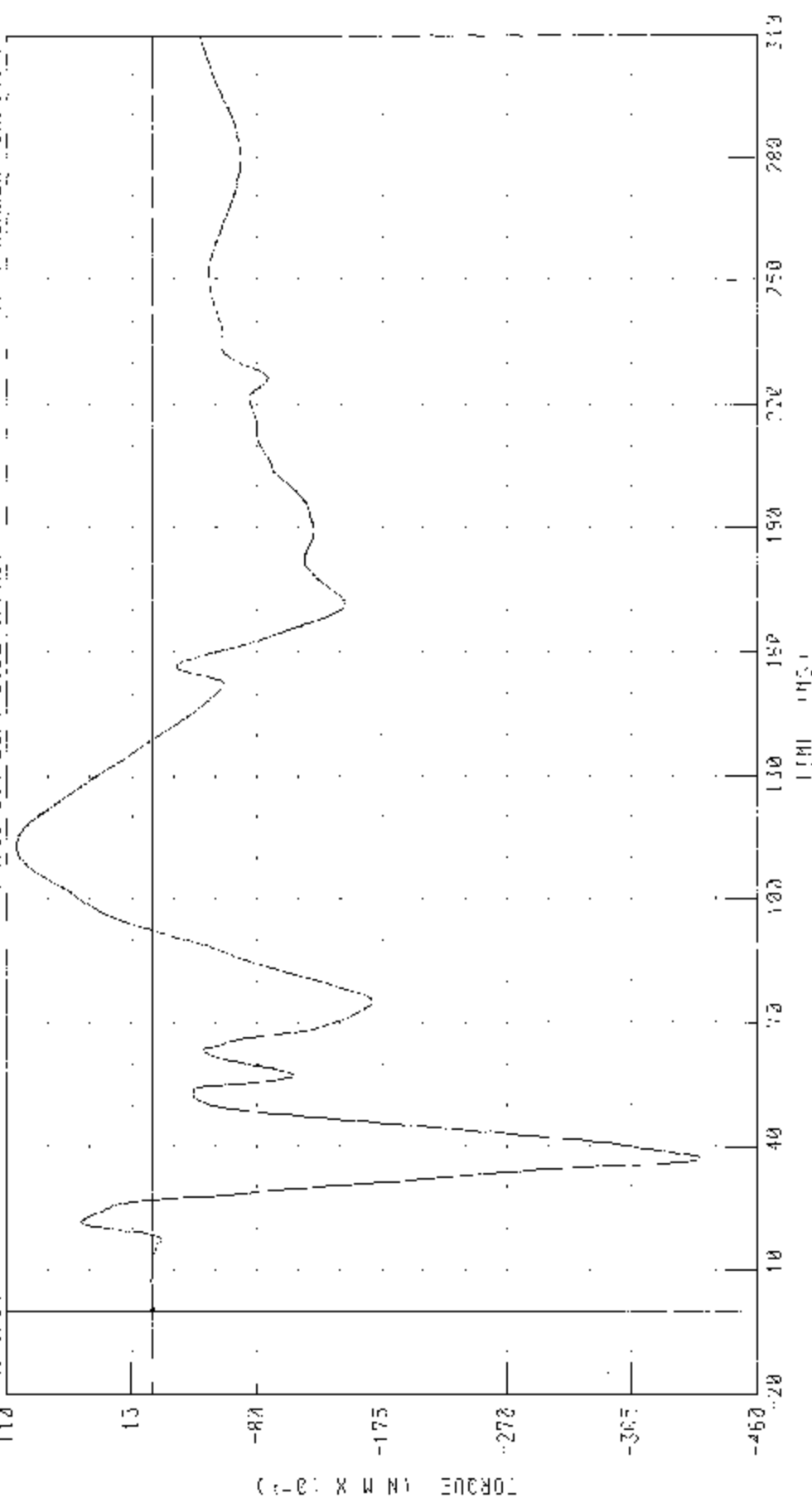
CHANNEL1: NFK7N1 FILTER: CH CLASS: 500

PEAK DATA: 32.71 NLT 6.02 24.15, -0.30 NLT 2.10 3.44 MS

55228 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARREL) INTO LEFT SIDE OF 2003 MERCEDS-BENZ 4240

DRIVER NECK OCCIPITAL CURVATURE MOMENT (NMM) X AXIS

TRC INC. FVSS 214 LEFT SIDE IMPACT IFST NUMBER 030505-1



CHANNEL NR0001 FILTER ON, CLOS 300

IFST DATA 10 31 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

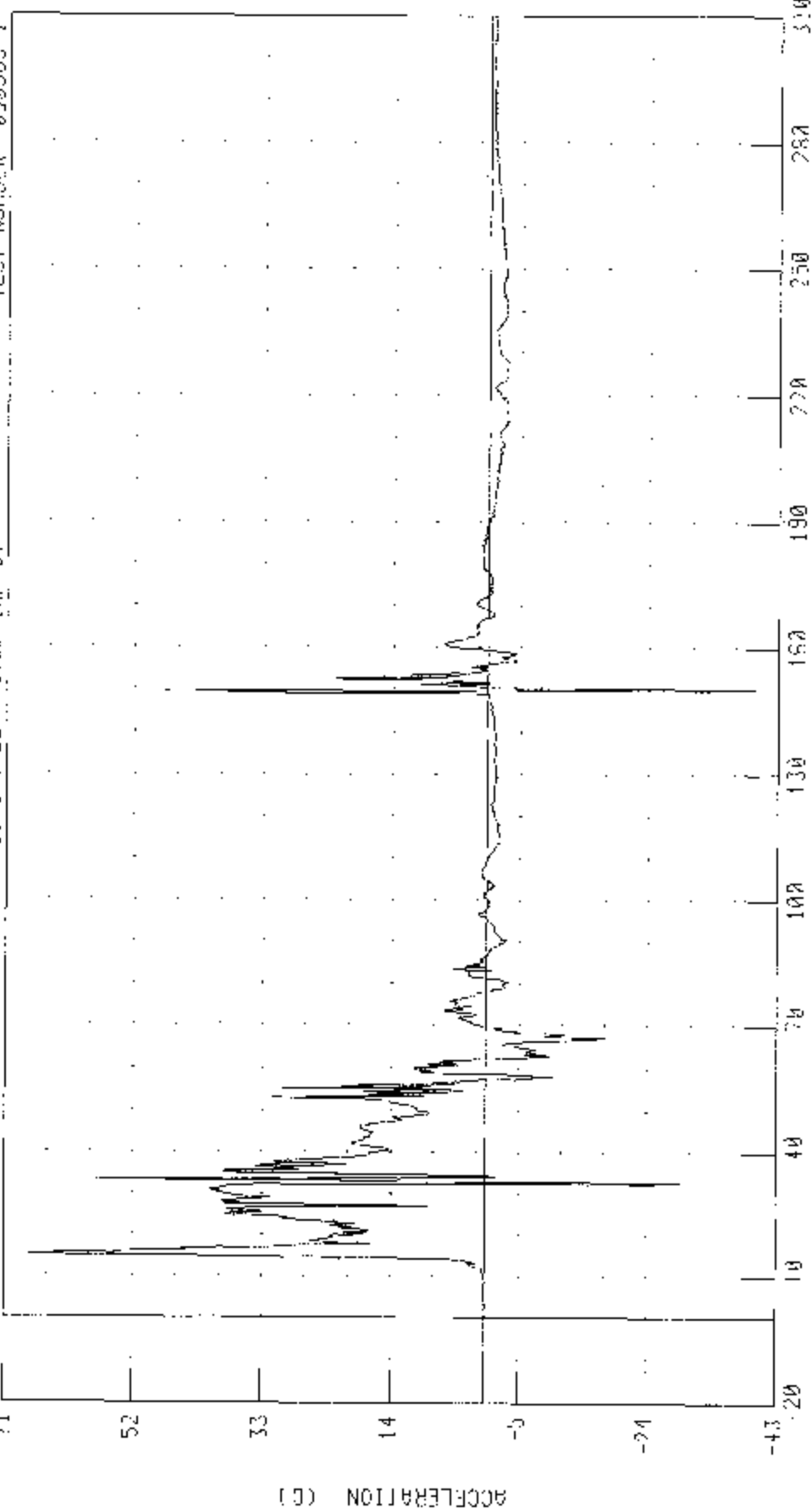
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER UPPER RIB Y-AXIS ACCELERATION

TRC INC

TEST NUMBER 013505-1

FMVSS 214 LEFT SIDE IMPACT



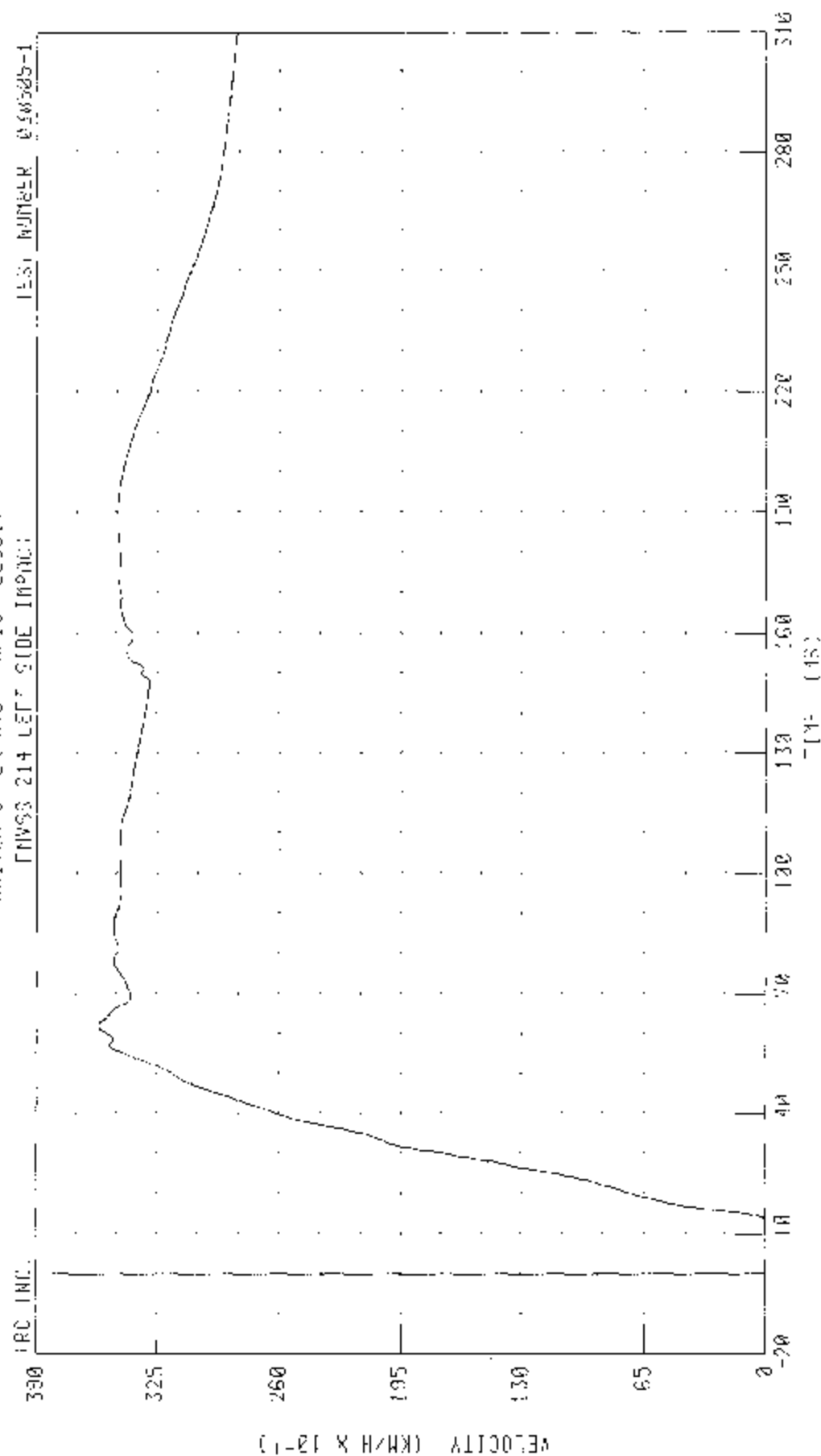
TIME (MS)

CHANNEL LUR701 FILTER CH. CLASS 1000

PEAK DATA 67.40 G @ 15.28 MS. 30.73 G @ 160.28 MS

55/20 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

DRIVER UPPER RIB X-AXIS VELOCITY



CHANNEL 1: L1:VVC FILTER: CH 1:055 130

PEAK DATA 35.62 KPH @ 62.10 MS, 0.00 GHS @ 0.44 MS

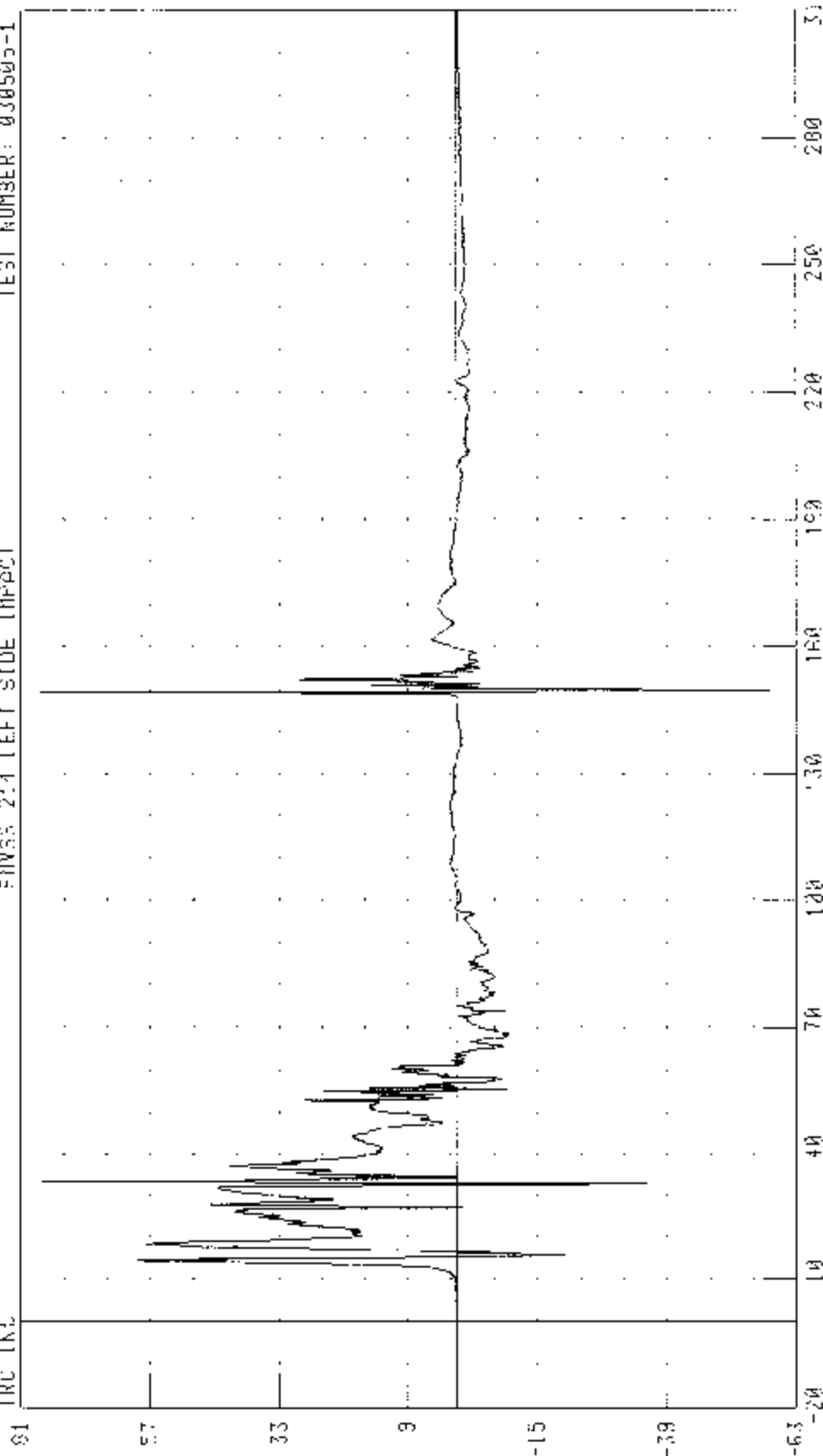
55/28 MPH 90 D-53FE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2002 MERCURIO-BFN/ C240

DRIVER LOWER RIB Y-AXIS ACCELERATION

TEST NUMBER: 030505-1

SVSS 214 LEFT SIDE IMPACT

IRC INL



CHANF1 - IRC1 FILTER - CH C 055 1000

FILE

INSE

PEAK DATA 77 26 6 6 141 42 75. 50 10 6 8 150 03 13

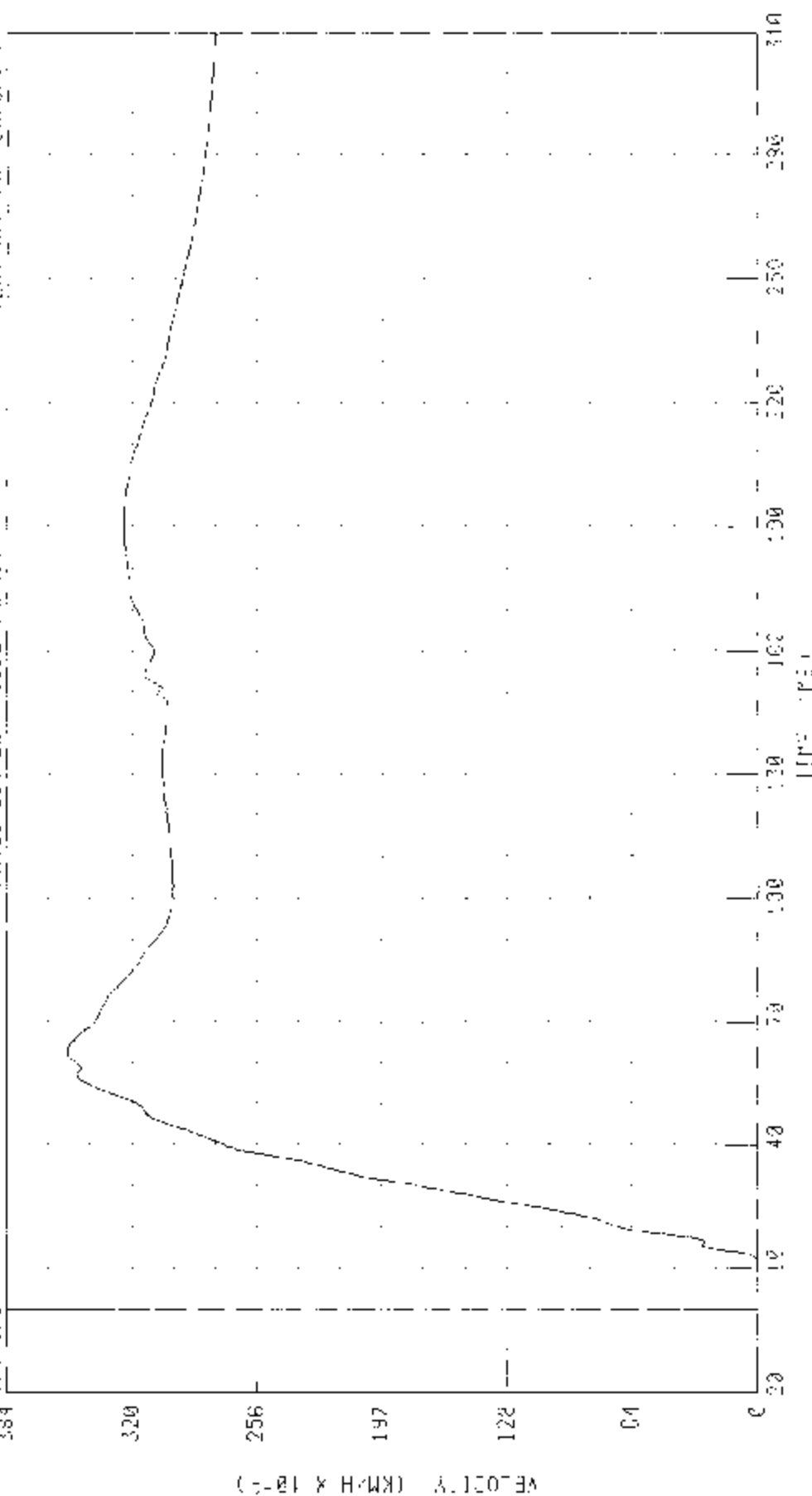
55/20 MPH 30 DEGREE SIDE IMPACT MOVING DEFORMABLE BARREL INTO LEFT SIDE OF 2003 EXC1025 BONE C2-0

DRIVER LOWER RIB 9-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

384 INCH

11.31 E.M.P.H. 2.04505-1



TIME (SEC)

CHANNEL 11 (VX) FULL-SCALE RANGE 100

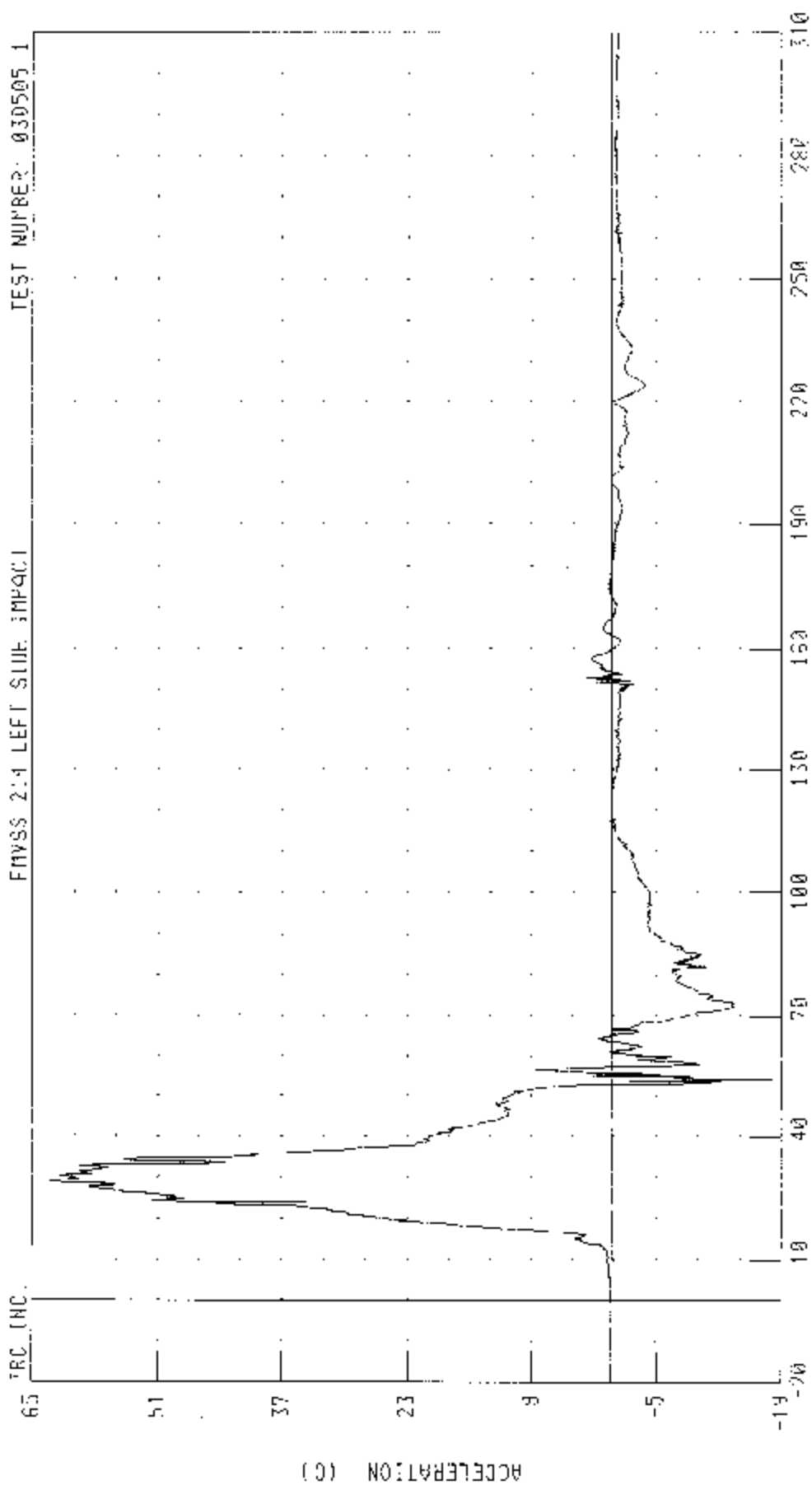
DATE DATA 75/25/0114 H 42 34 MS: K 00 800-4 W 0 04 15

55-28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER LOWER SPINE Y-AXIS ACCELERATION

TEST NUMBER: 030505-1

FMVSS 214 LEFT SIDE IMPACT



CHANNEL T12V01 FILTER ON CLASS 1000

DATA 63 14 0 9 29 12 MS; -17 93 0 9 54 15 MS

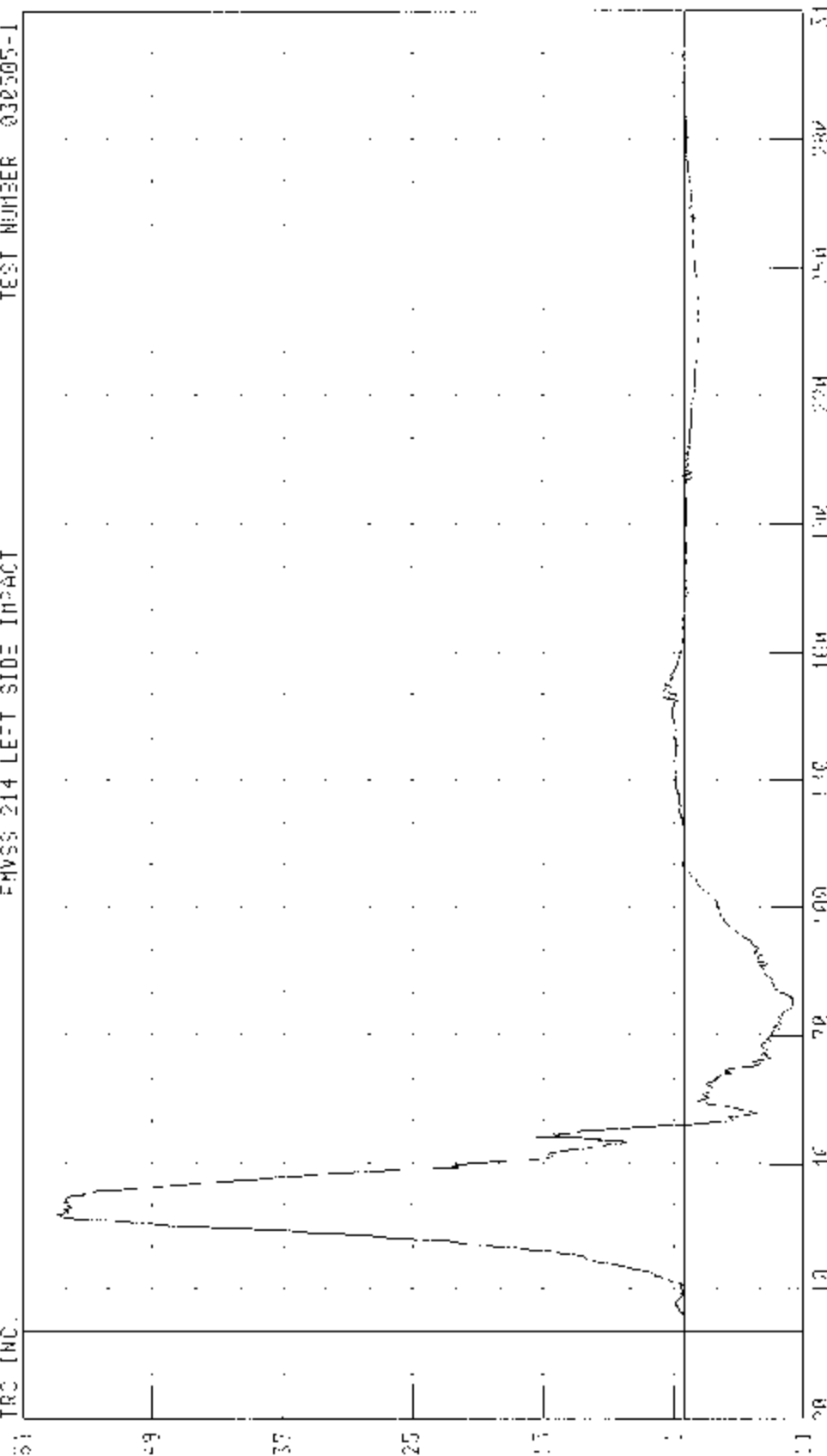
55-23 471 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

DRIVER PELVIS Y-AXIS ACCELERATION

TEST NUMBER 030505-1

FMVSS 214 LEFT SIDE IMPACT

TRC INC.



CHANNEL 1 PELVIS CENTER OF MASS DATA

PEAK DATE 57 90 6 0 27 70 10 10 10 0 78 50 15

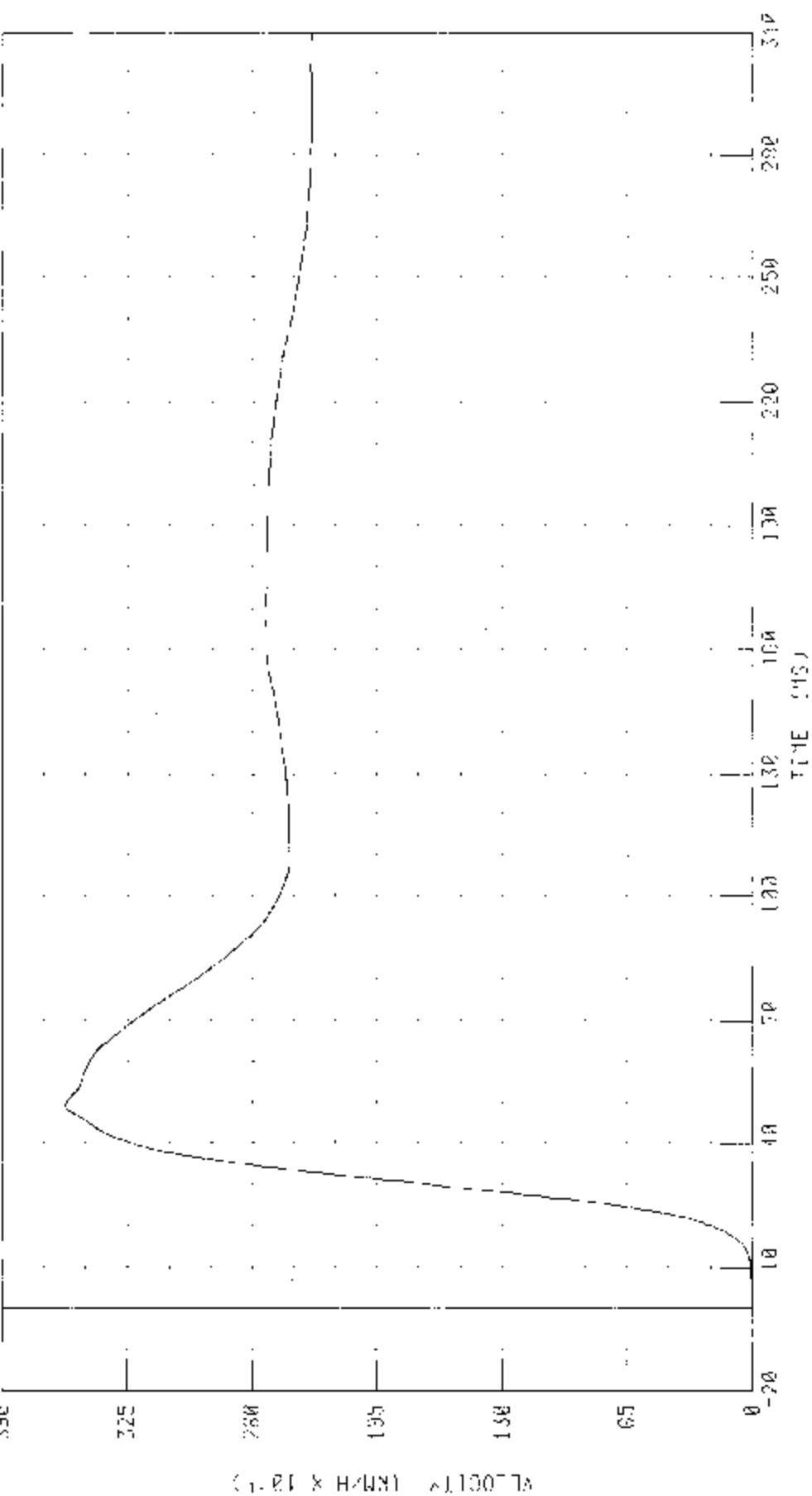
55/28 KPH 50 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER PELVIS Y-AXIS VELOCITY

TRC INC 390 325 280 195 150 65 0 -20

FWSS 214 LEFT SIDE IMPACT

TEST NUMBER 030505-1



PCAP DATA: 35.69 KM/H A 49 36 MS, 6.34 KPH AT 2.20 MS

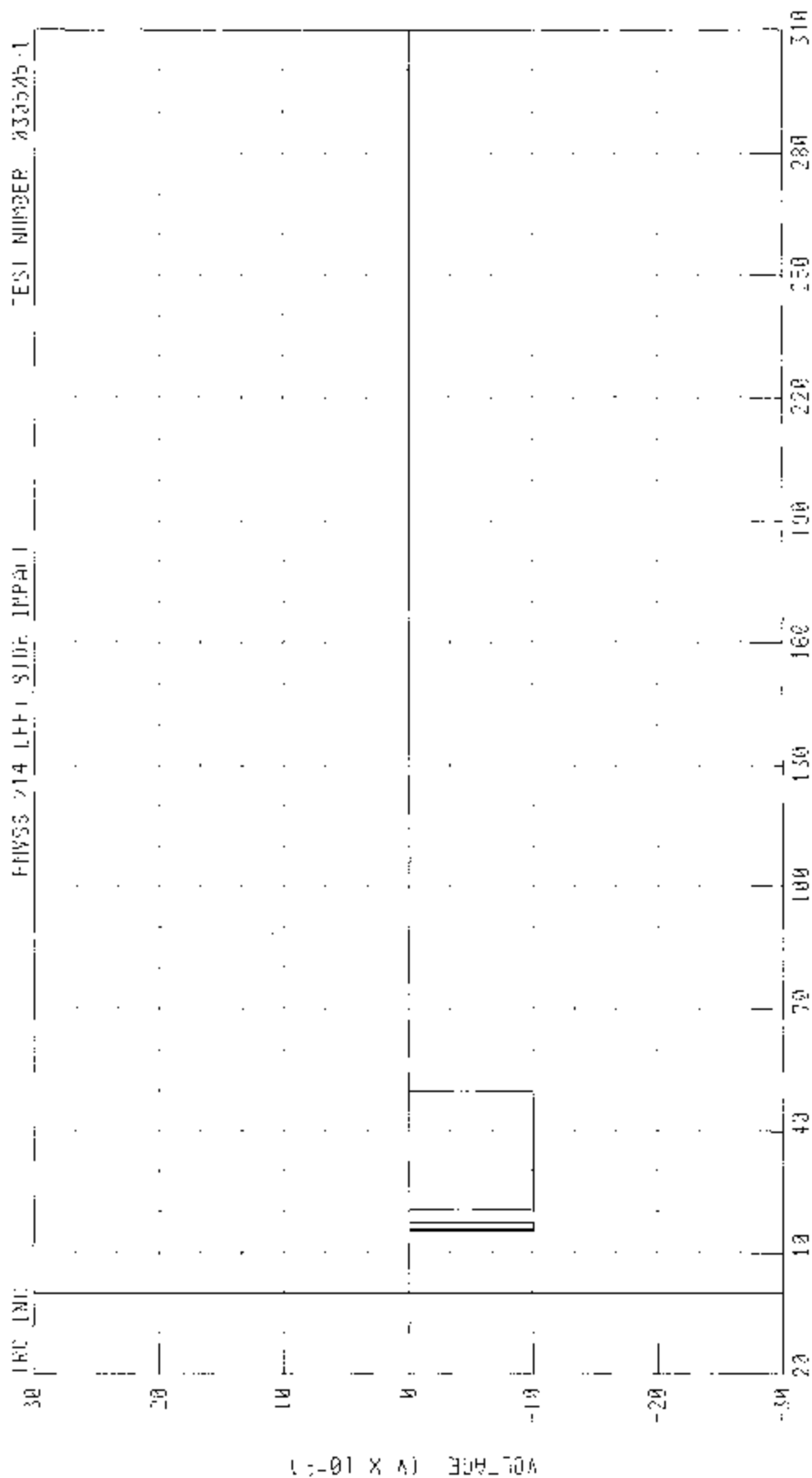
CHANNEL PELVIS FILTER ON CLASS 130

55-28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER SHOULDER CONTACT SWITCH

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030505-1



CHANNEL 01LFI1 FILTER 50H CL400 1400

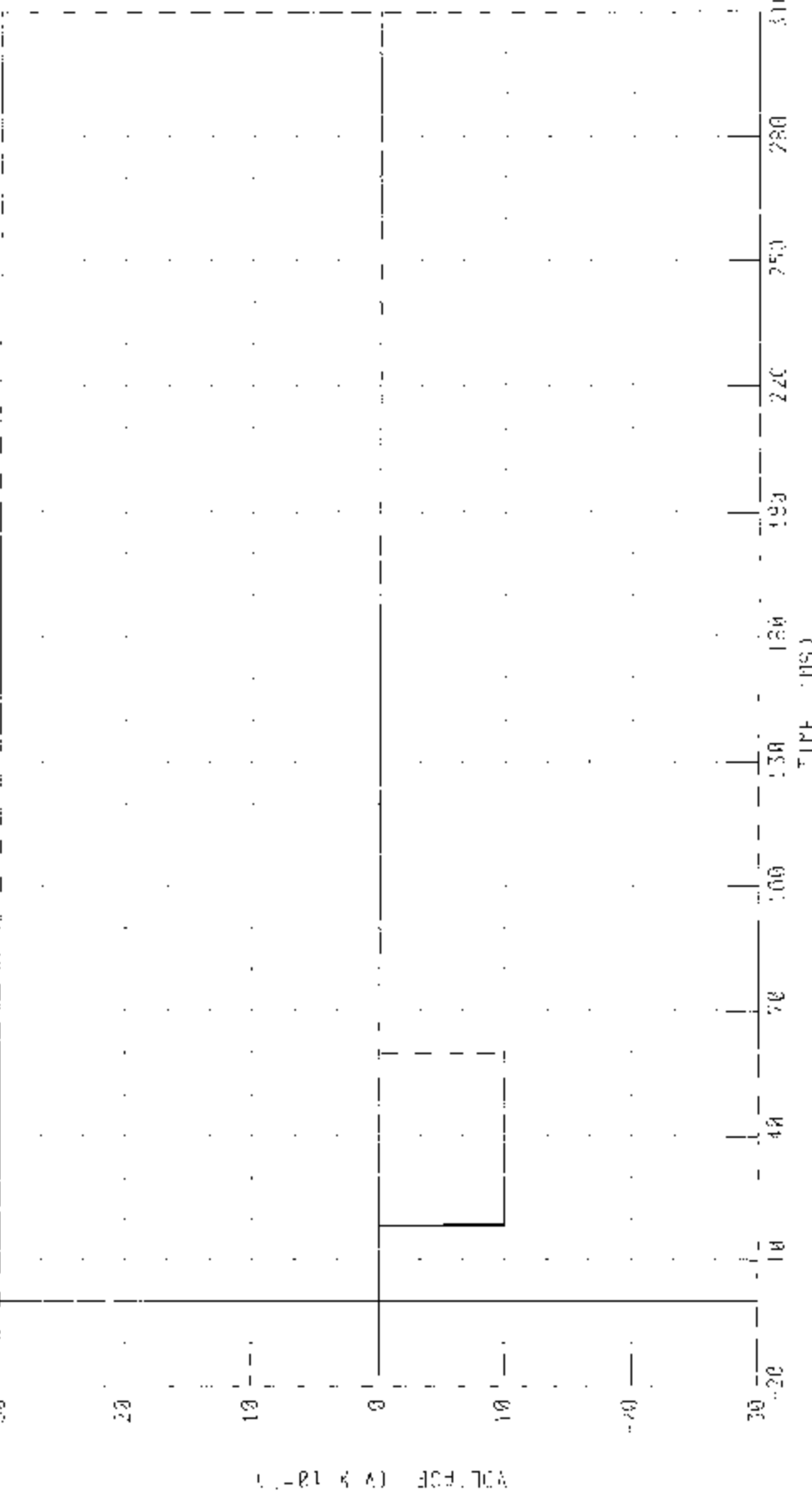
PEAK DATA 0.00 V @ 310.00 MS, -1.00 V @ 15.38 MS

55/20 KPH 90 DEGREE SIDE INFULT (MOVING DEFORMABLE BARRIER: 0010 LEFT SIDE OF 2000 DEFLECTOR-5 PPH/ 1.2M)

DRIVER PLAYS CONTACT SWITCH

PHASE 214 LEFT SIDE CONTACT

12" INC



CH001 PEVCT: 1.1118 011 0.055 1993

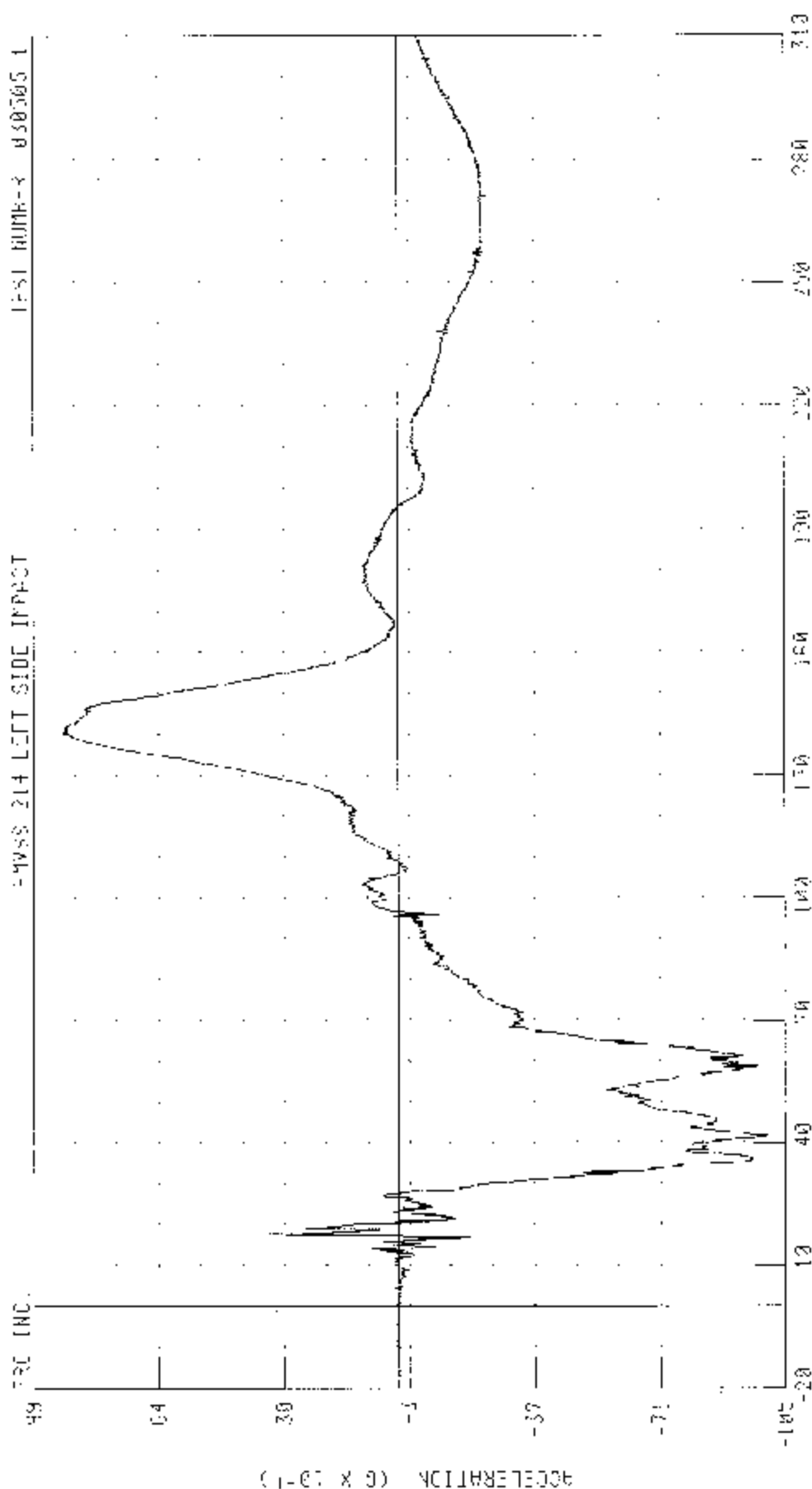
TIME (MS)

DEFLECTOR 0.00 V @ 210.00 INC 1.00 V @ 15.40 ms

55.23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) - NO LEFT SIDE OF 2000 MERCEDES BENZ C240

LEFT REAR PASSENGER HEAD X-AXIS ACCELERATION

TEST NUMB-3 030505-1

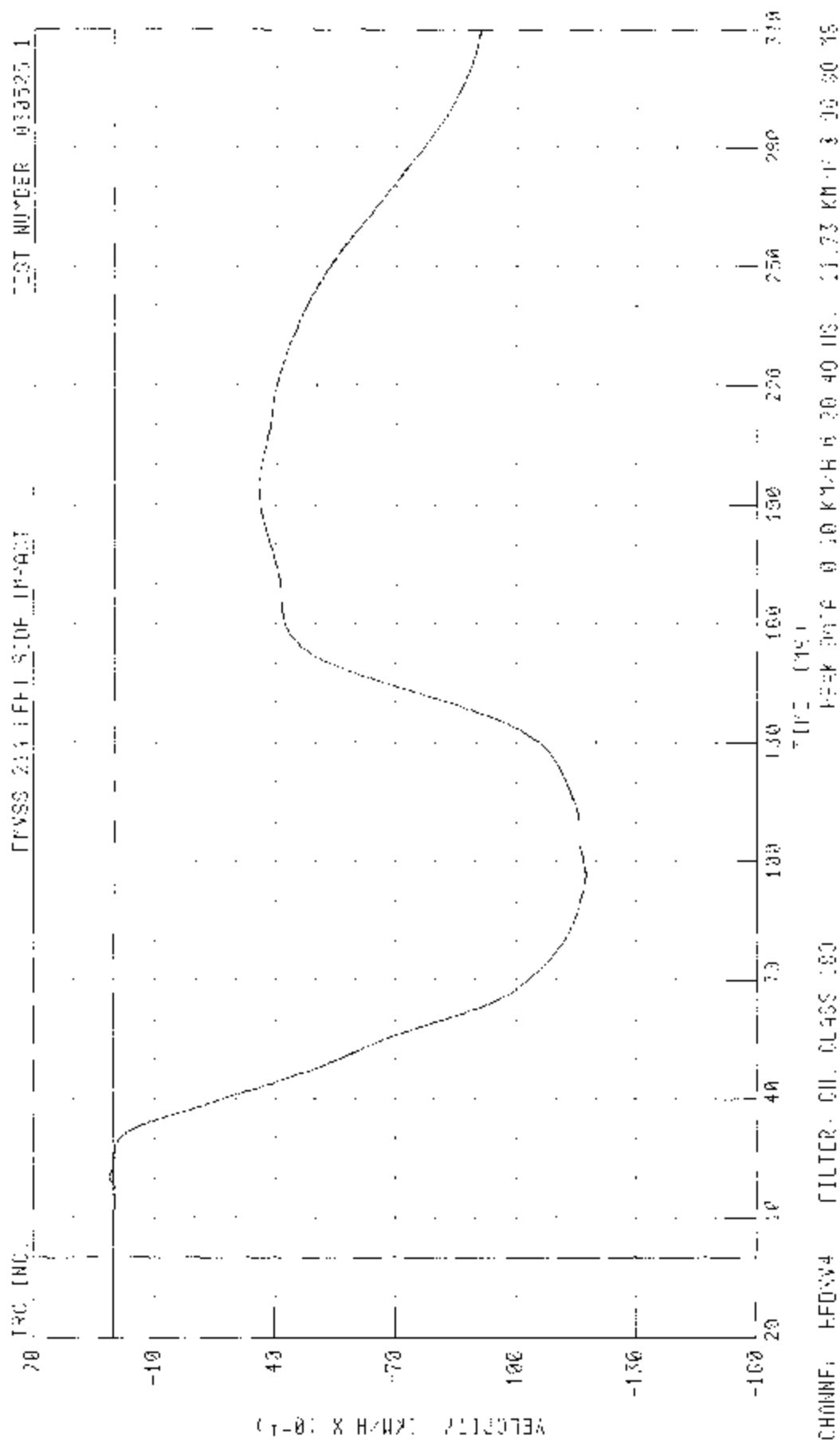


CHANNEL: HCD<0> FILTER: CH 1 (SS 1000)

TIME (MS) 0 50 100 150 200 250 300 310

55/23 4TH 90 DEGREE SIDE IMPACT (MOVING OFFSHORE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER HEAD X AXIS VELOCITY

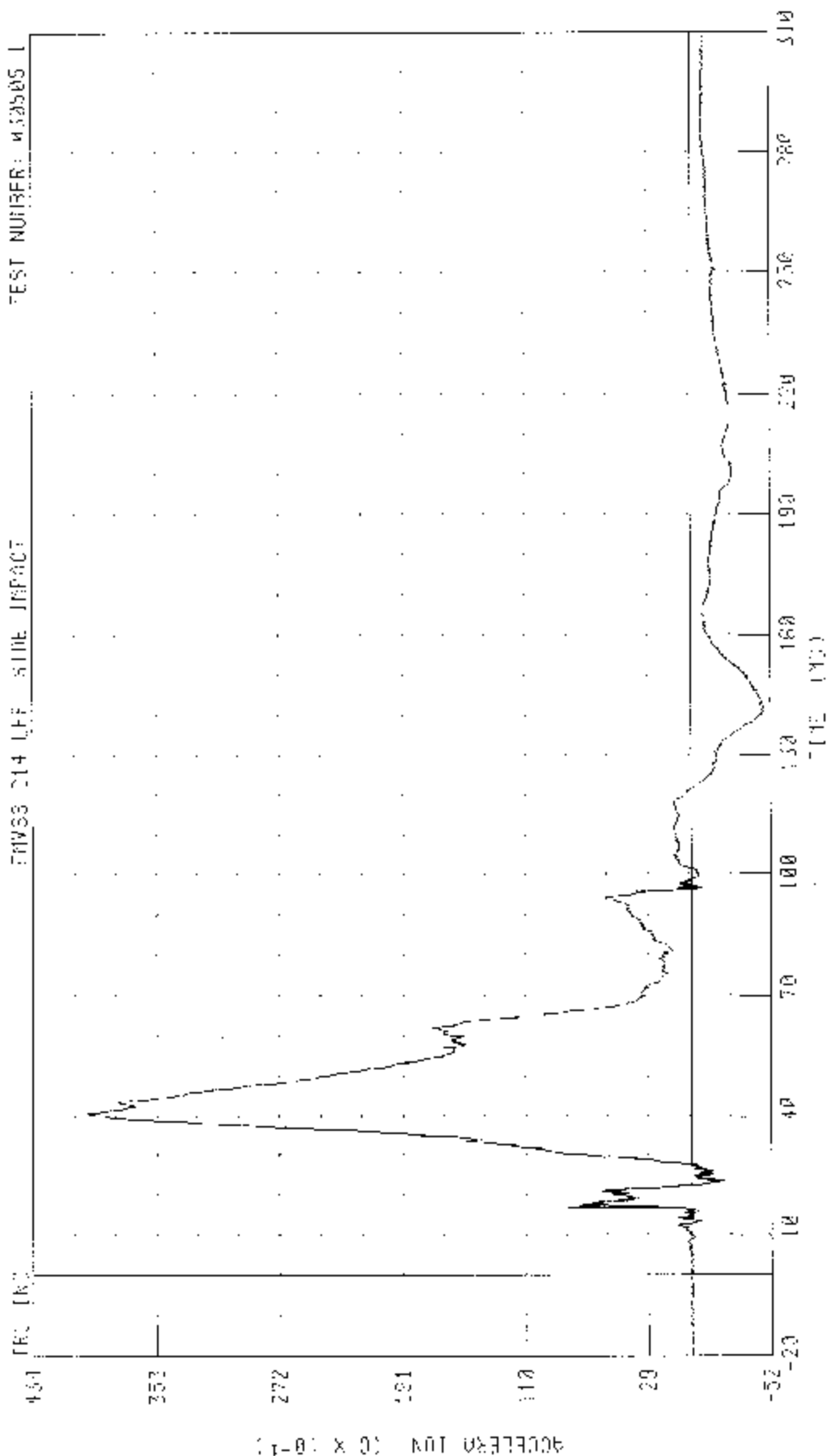


55.00 4PM 00 DEGREE 3000 LIPOLL MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER SEAT Y-AXIS ACCELERATION

TEST NUMBER: M30505-1

EMVSS C14 LEFT SIDE IMPACT



CUMUL. PEAKYCH FILTER OF G-ASS 1840

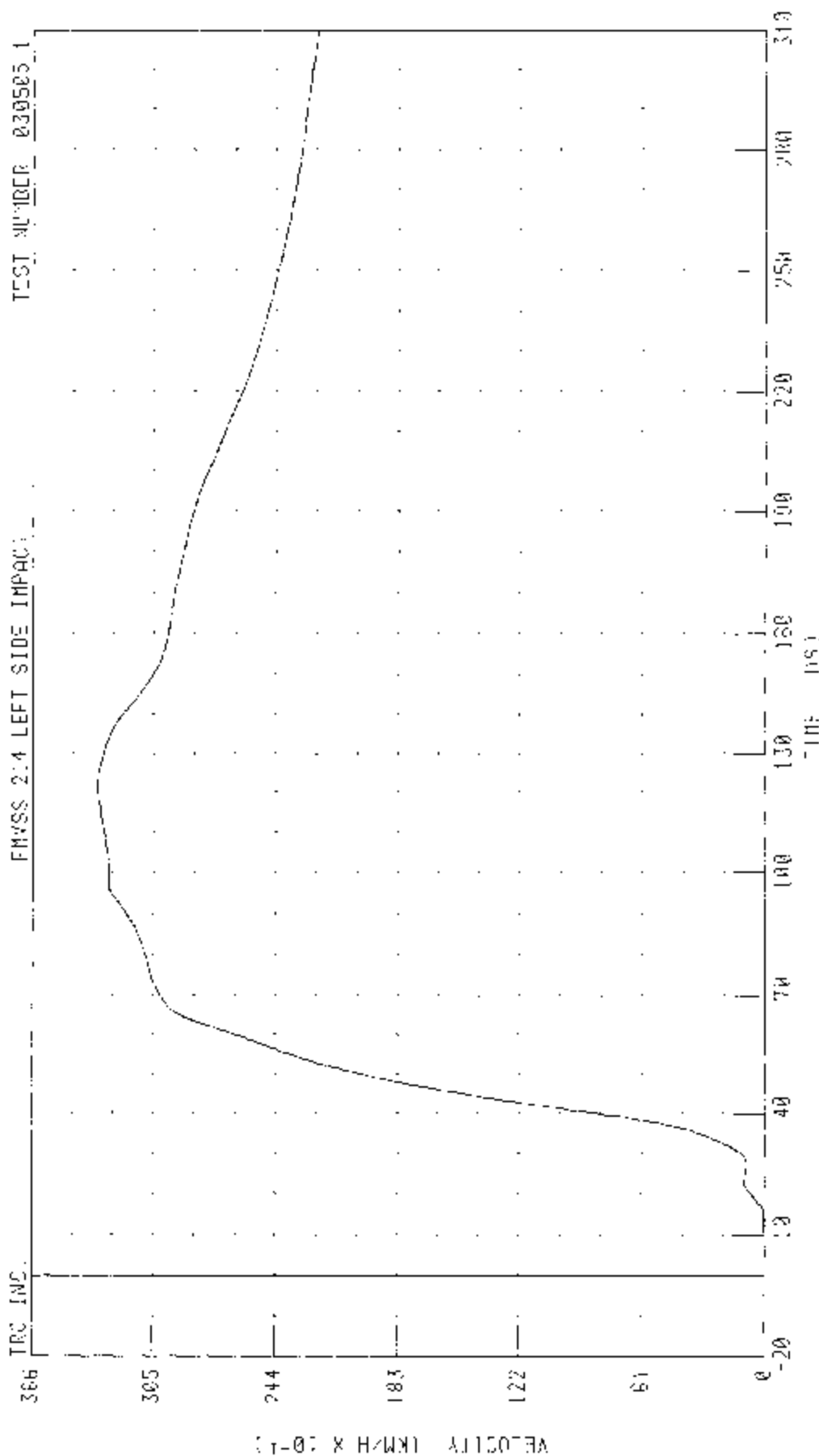
PEAK DATA 39 05 0 0 40 89 MS) -4 75 0 W 110.00 10

55/28 MPH 90 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

LEFT REAR PASSENGER HEAD Y-AXIS VELOCITY

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030505-1

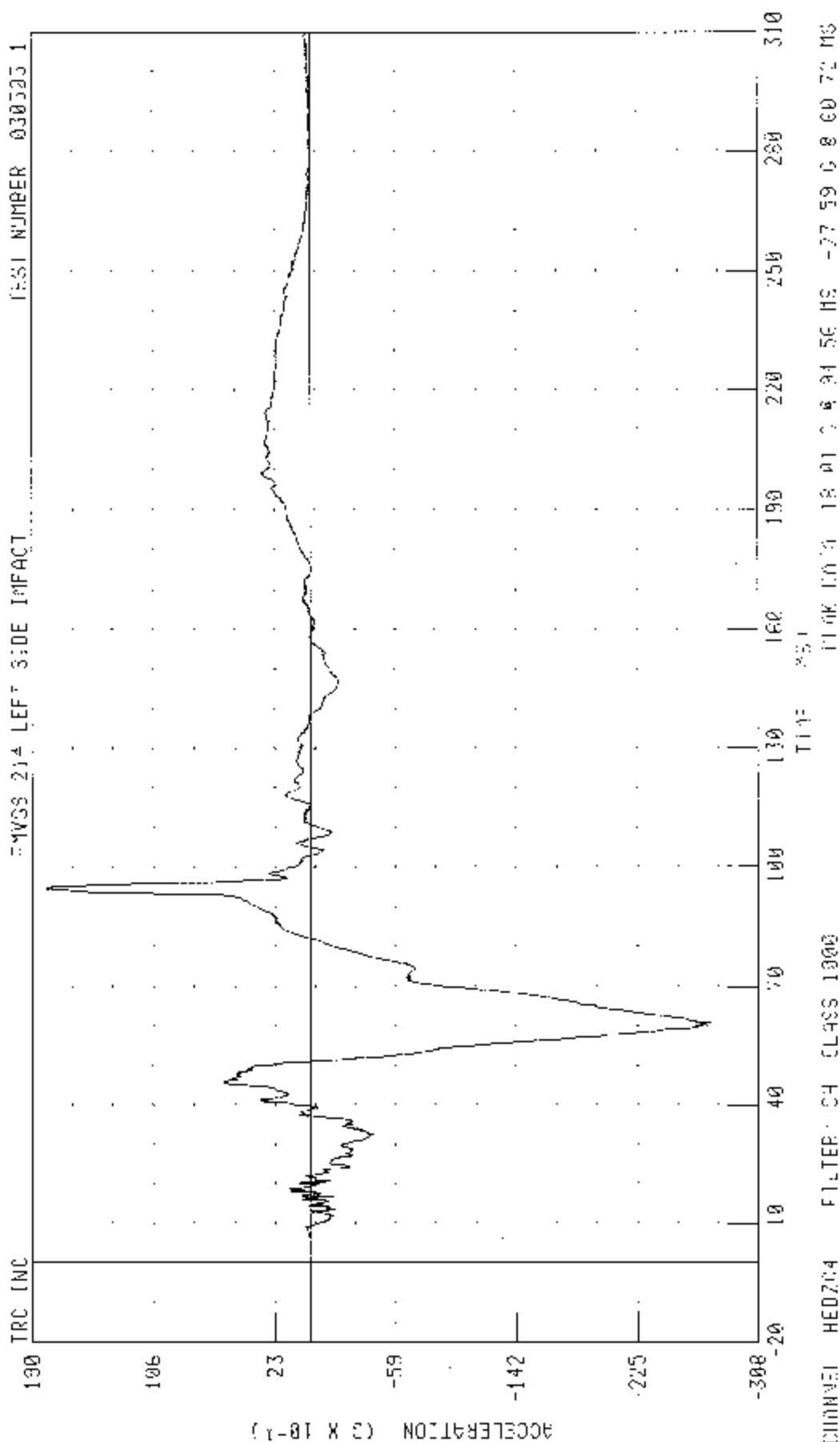


PLAY DATA 33 35 KM/H 3 12 36 MS 0 00 30/4 0 0.72 ms

CHANNEL 000241 FILTER CH CLASS 180

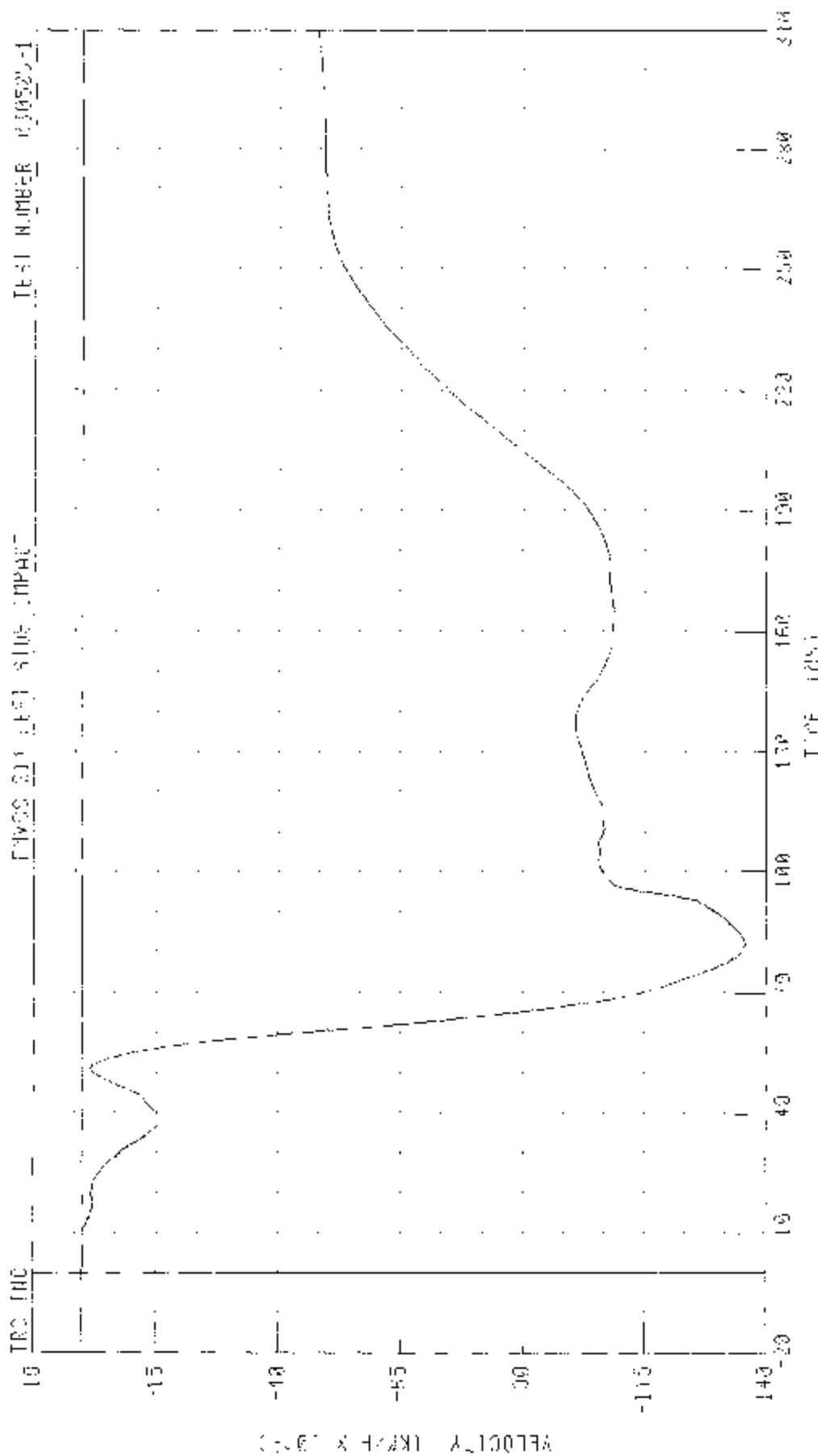
55.28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER HEAD Z-AXIS ACCELERATION



50000 KPH 90 DEGREE SIDE IMPACT MOVING OFFSHORE BARRIER INTO LEFT SIDE IN 2003 HAPPLIES 2007 0200

LEFT REAR PROSENSOR HEAD Z AXIS VELOCITY

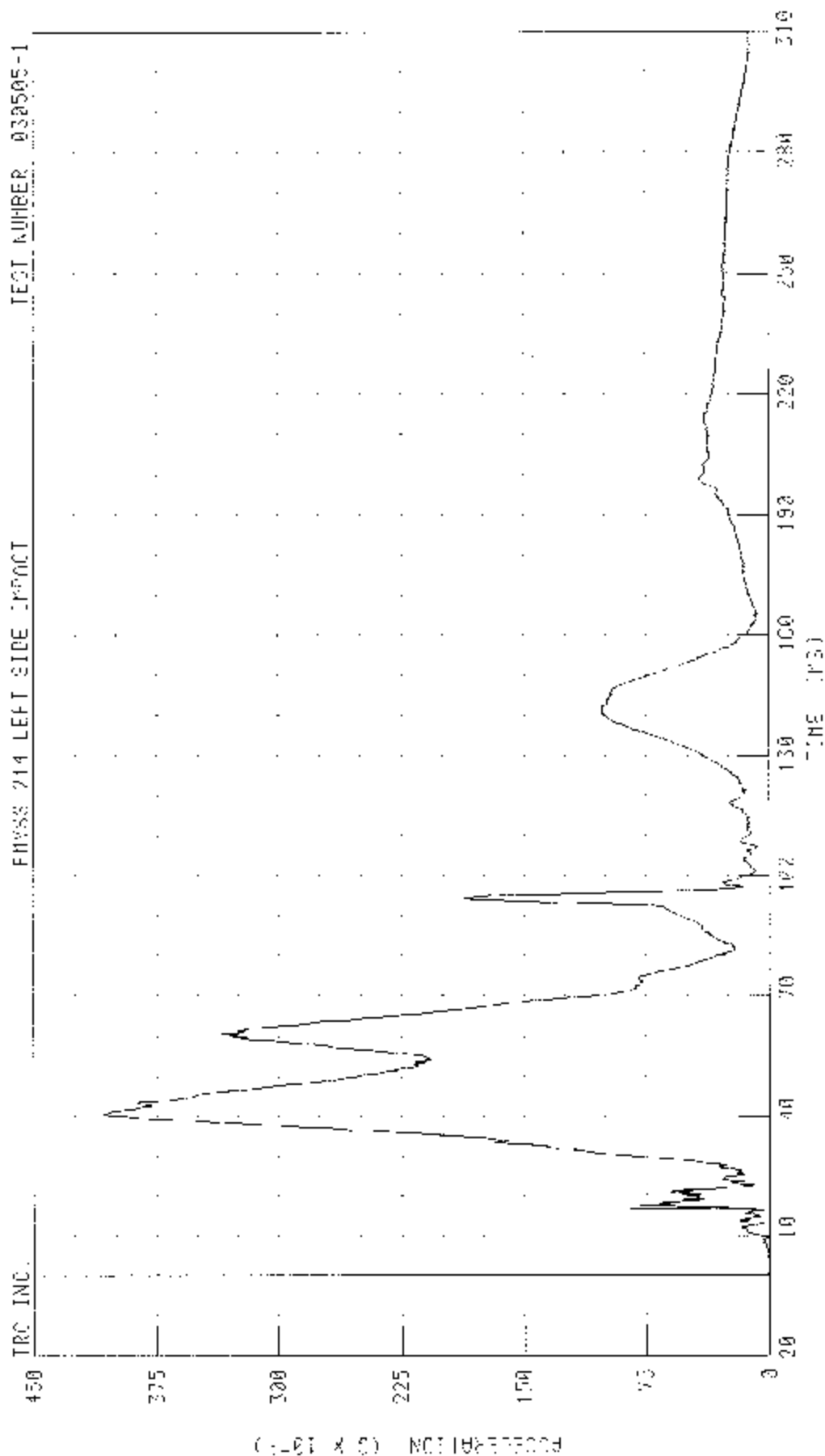


CHANNEL HEAD 200709 04 16-0 180 FLAK DATA 0 01 20-0 0 0 70 MS, -11 53 20 0 0 08 15

55/28 KM/H 90 DEGREE SIDE IMPACT CRASHING OFF-RAMPABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER HEAD RESULTANT ACCELERATION

TRC INC. FMVSS 214 LEFT SIDE IMPACT TEST NUMBER 030505-1

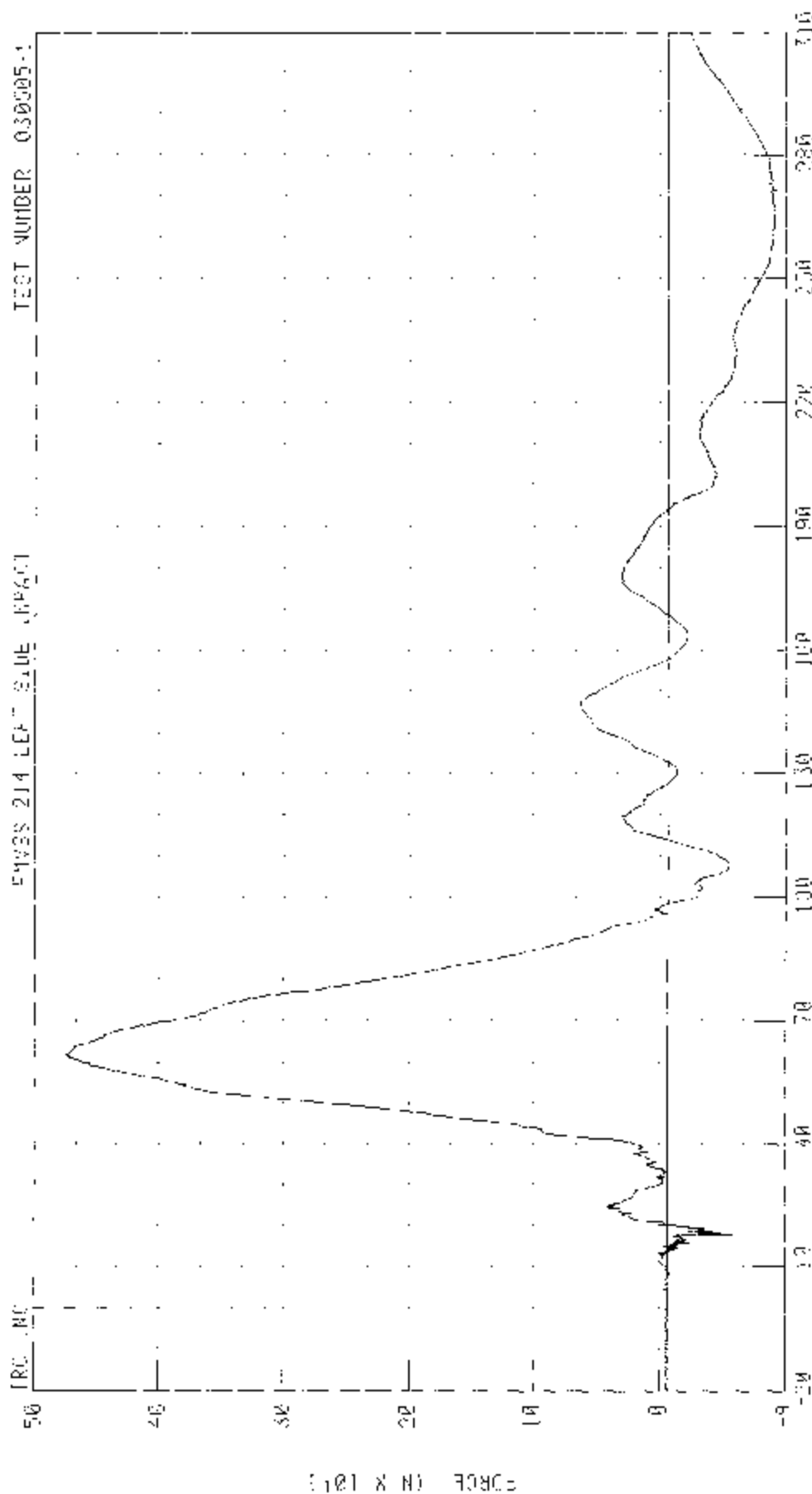


PANEL 060304 FILTER ON GROSS 1000

TEST DATE 40 03 06 40 88 MS. A 02 00 -14 42 MS

30078 CHH 20 DEFLECT SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2007 MERCEDES-BENZ 1240

LEFT SEAT PASSENGER NECK X-AXIS SHEAR FORCE

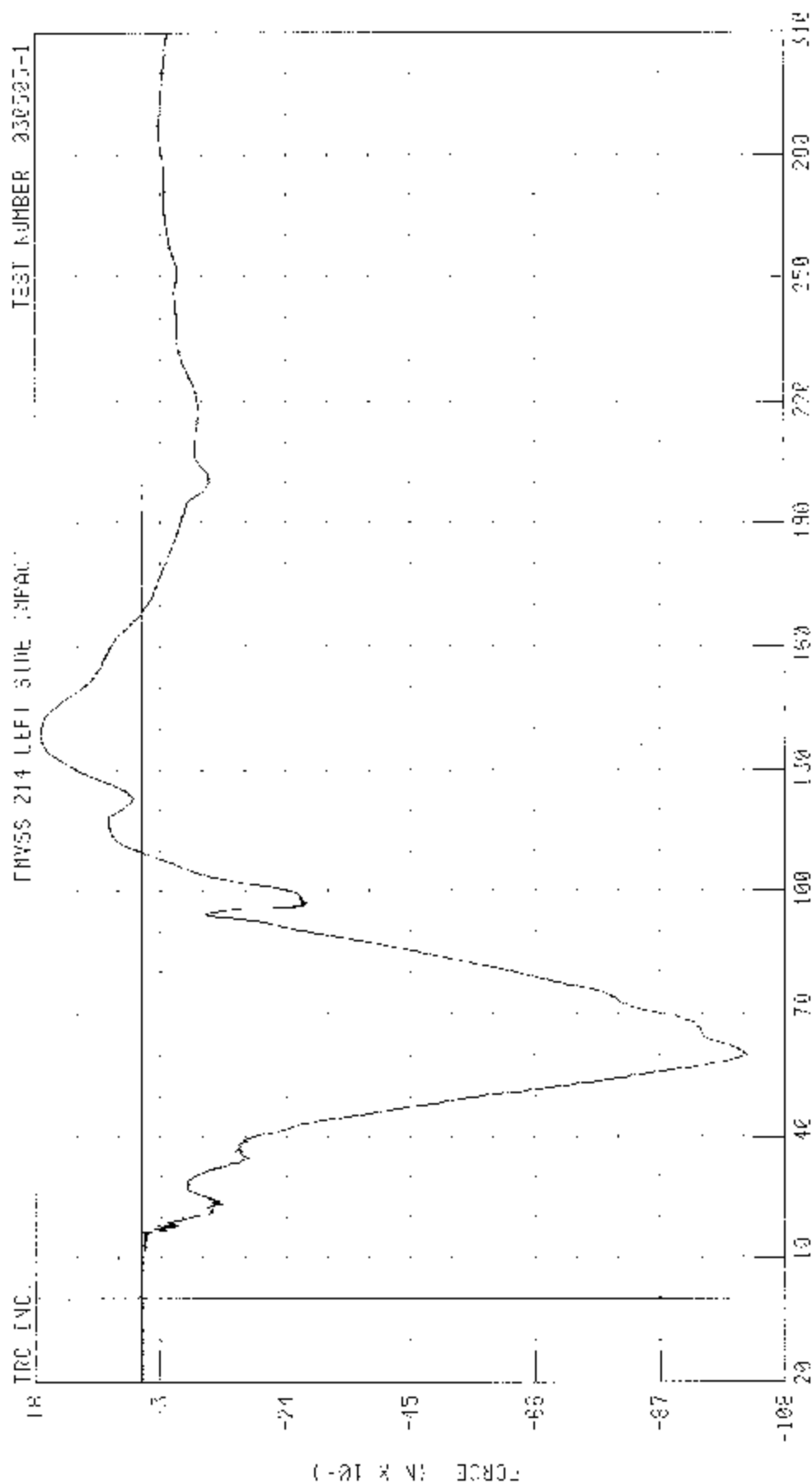


CHUCKLE: NEXUS-2 MILLER CH CHAS 1000

TIME (ms) 0 100 200 300 400 500 600 700 800 900 1000

35.28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER NECK Y-AXIS SHEAR FORCE



CHANNEL NL2714 CUBIC 25000000

TIME (MS)

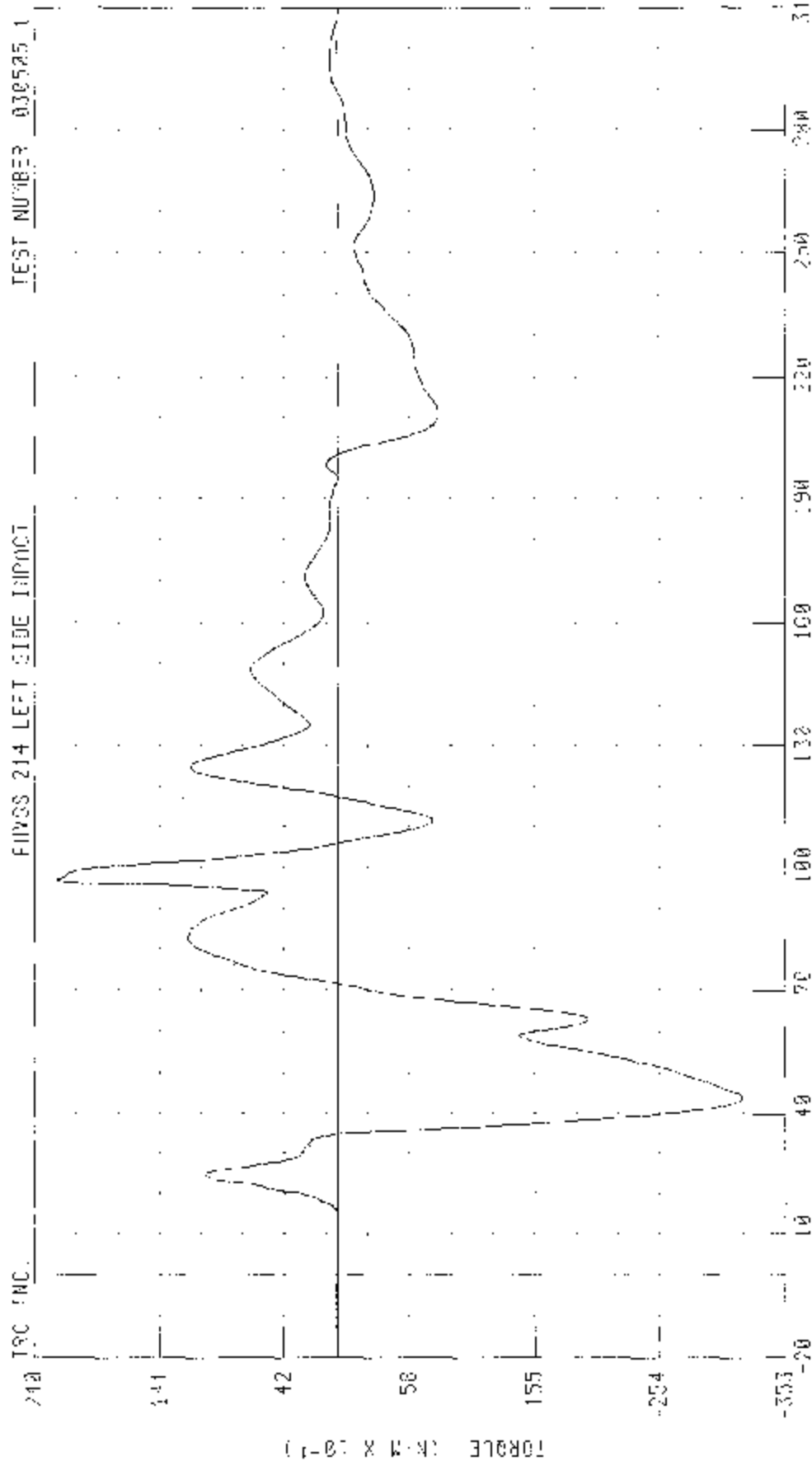
PEAK DATA 171.76 N 0.000000 100.00 0.00 0.00 0.00 0.00

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER NECK MOMENT ABOUT X AXIS

TEST NUMBER 030505-1

FINVSS 214 LEFT SIDE IMPACT



TIME (MS)

CHANNEL: NECK14 FILTER: CH C ASS 630

AP DATA 00 29 R P 0 10 50 15, 32 MS N-M 8 42 03 MS

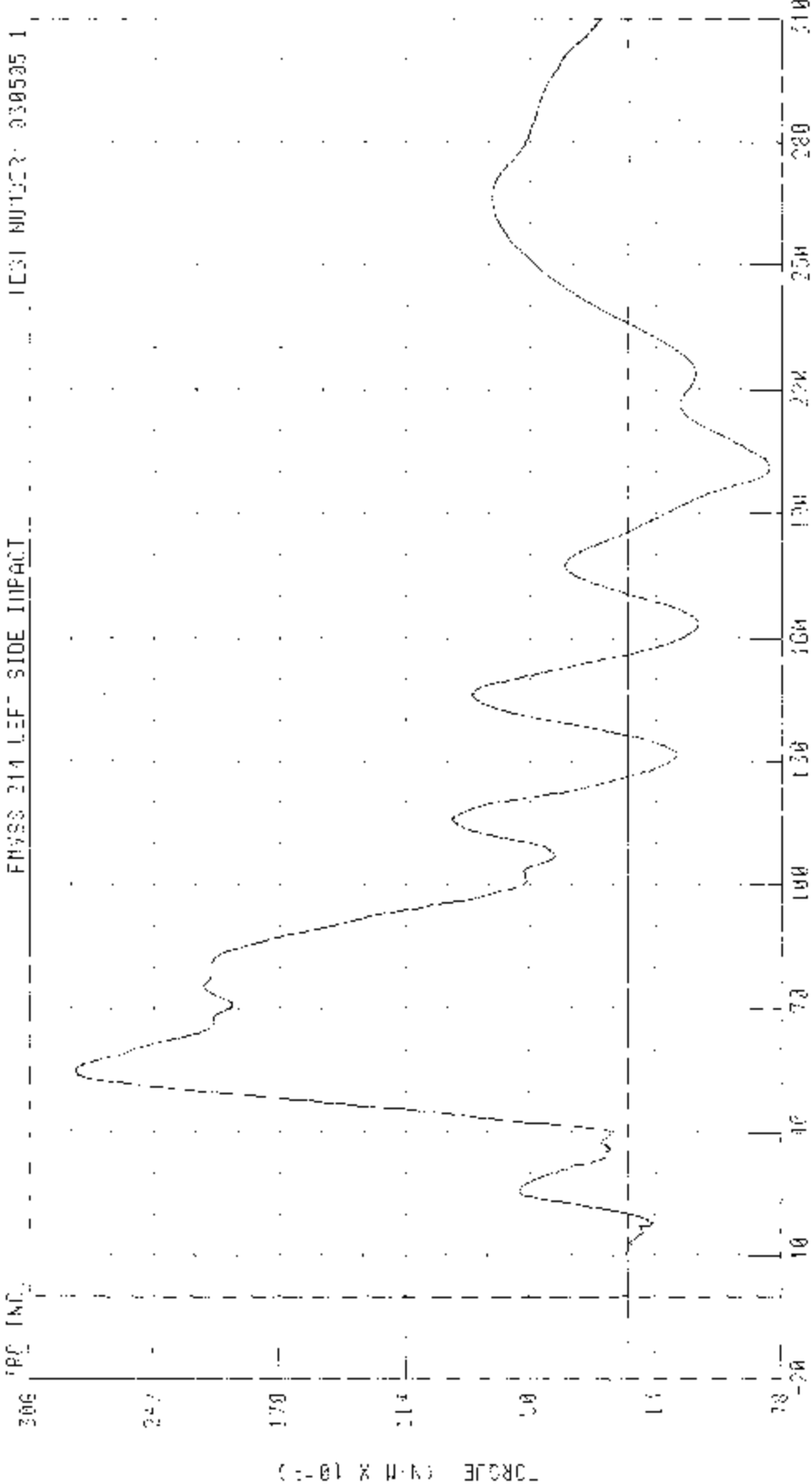
03-28 XPH 40 D-CR-3 SIDE IMPACT CLOVING DEFORMABLE CARRIER 1110 F-1 SIDE OF 2400 PERCEDES 3542 0240

LEFT REAR PASSENGER NECK MOMENT DROU-Y 0003

TEST NUMBER 030505 1

PHYS 214 LEFT SIDE IMPACT

180 INCH



CHANNEL BLK274 111000 0000 600

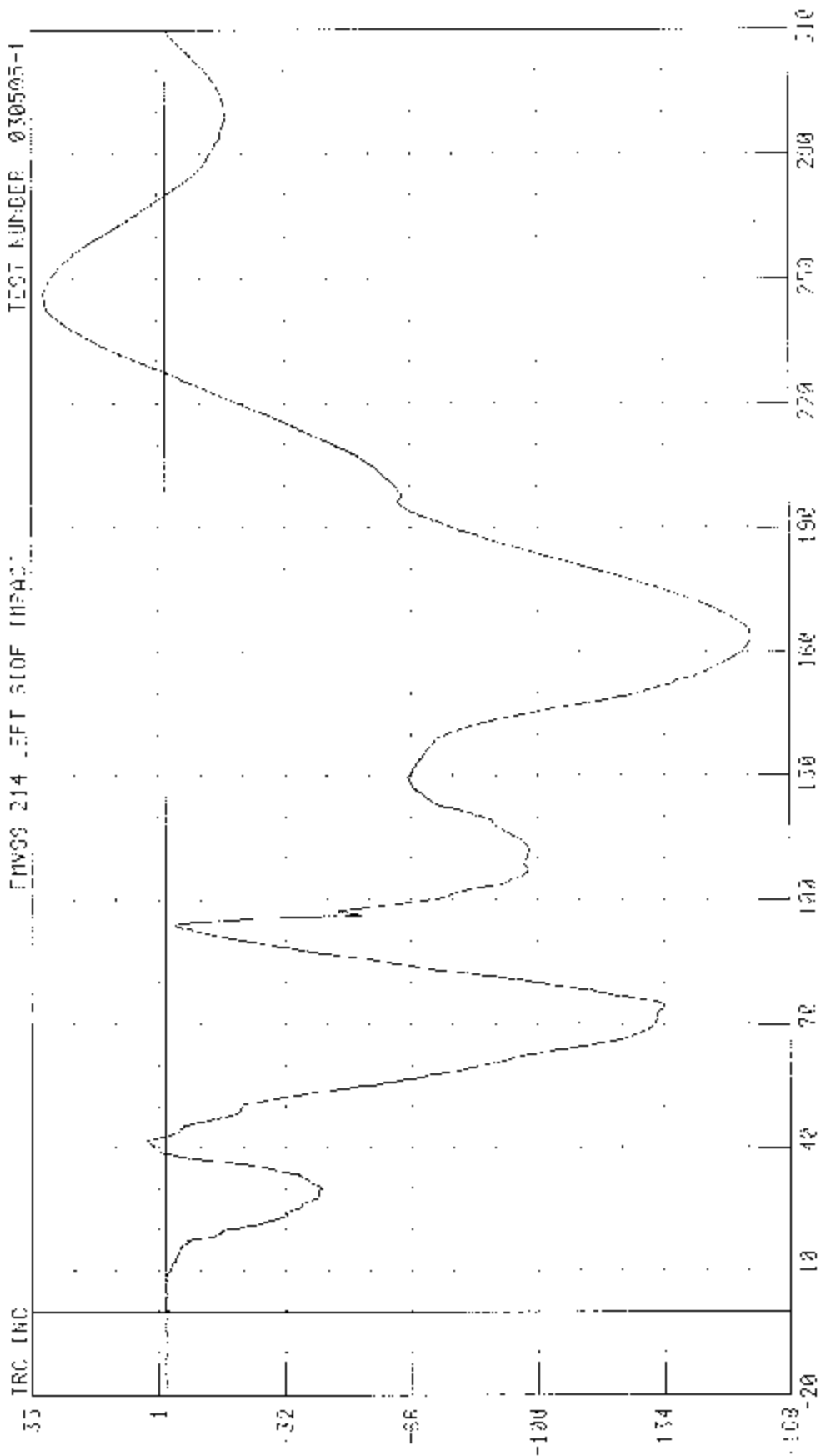
PERF 0074 23 24 APR 0 54.48 DS. 1 10 M 0 700 39 H2

55/28 KP-1 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ 1710

LEFT REAR PASSENGER NECK MOMENT ABOUT Z AXIS

TEST NUMBER 030505-1

ENV99 214 LEFT SIDE IMPACT



TIME (MS)

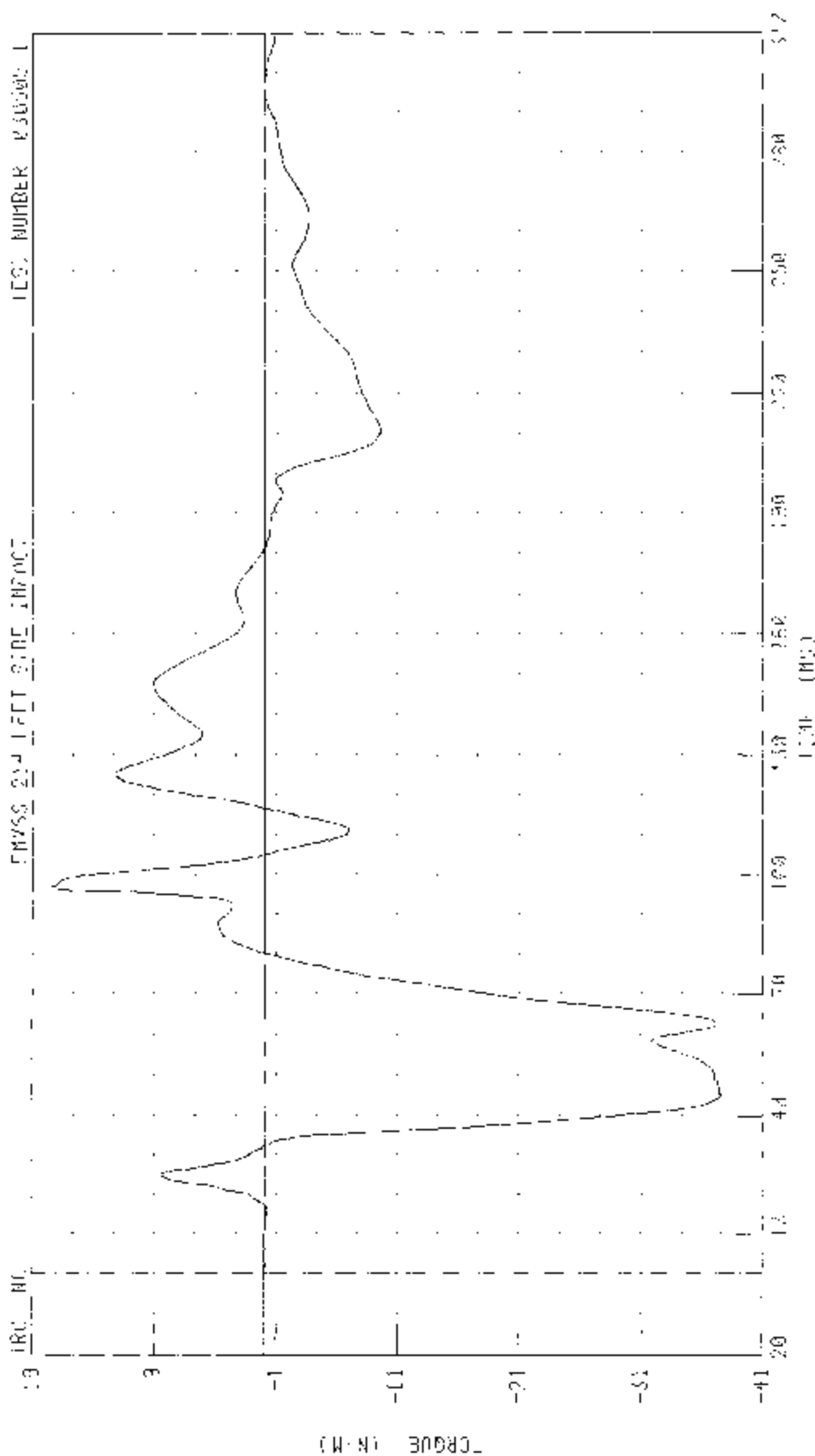
CHANNEL NFK7114 F1 TR CH CLASS G40

PEAK DATA 28 N 0 245 32 13, 15 15 N 1 0 163 65 13

LT-01 X 4-N 370801

55-28 APR 90 DEGREE SIDE IMPACT (NAVY'SO BEFORE THE BOOBYER) INTO LEFT SIDE OF 2003 HIFRUCTOS OFH2 0246

LEFT CLEAR PASSENGER NECK OCCUPANT: DANCHE HEMPHY 12007 X 8413



CHANNEL 160304 FILTER CH 4100 000

55K DATA 17 49 N 0 50 03 10 37.03 N 0 44 20 13

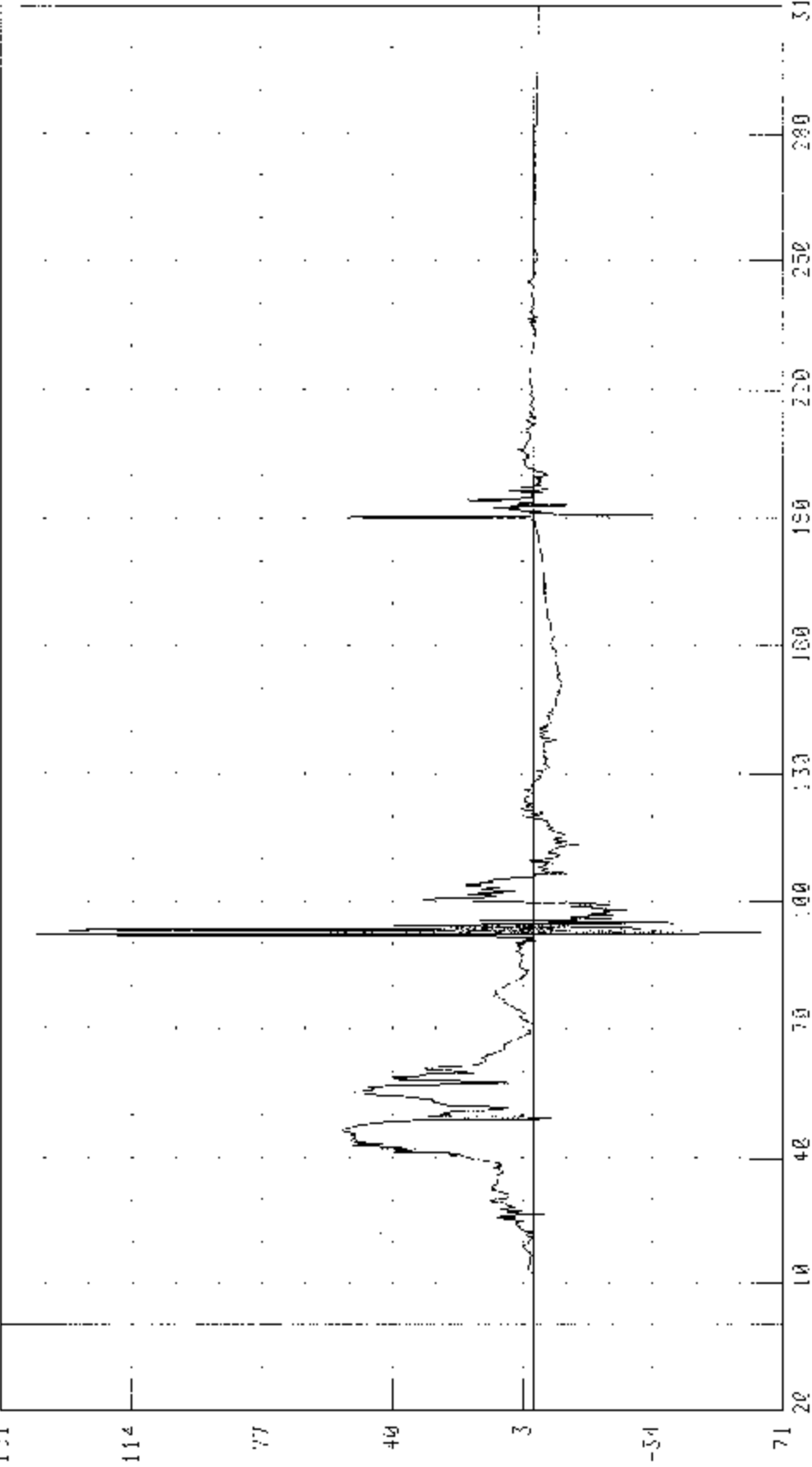
55.28 270 00 DEGREE SIZE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ 7240

LEFT REAR ROSSBENH4 JP>FR 210 Y-AXIS ACCELERATION

TEST NUMBER 030505-1

FRVSS 214 LEFT SIDE IMPACT

TRC IN2



ACCELERATION (G)

030505-1

B-48

CHIRP1 - 100004 FILTER ON CLOSE 1000

TIME (MS)

PEAK DATA 141 14 0 8 12 24 48 60 20 0 0 92 72 10

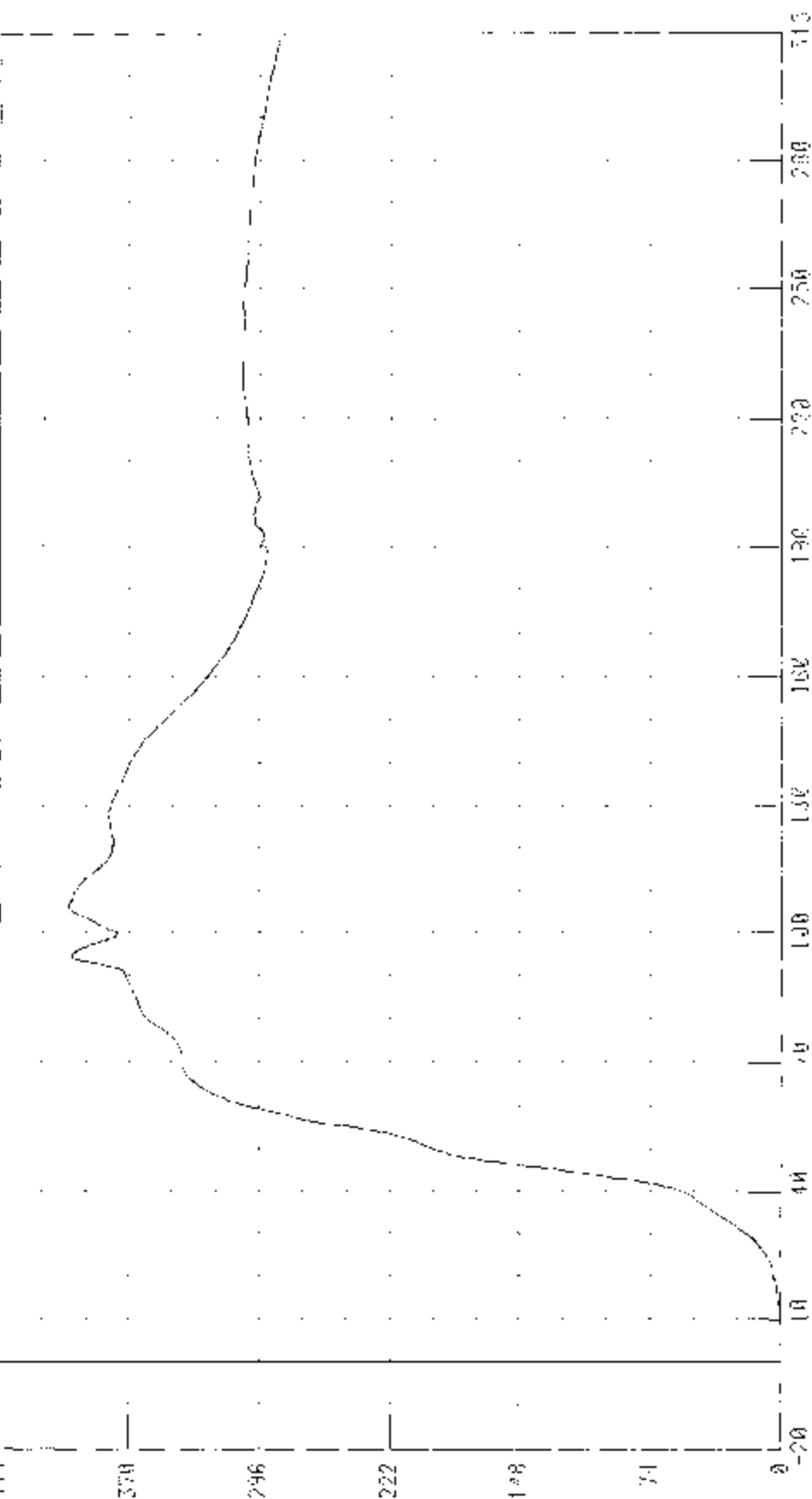
55:28 RPM 90 DEGREE SIDE IMPACT (MOVING DIFFURABLE BARRIER) INTO LEFT SIDE OF 2003 HERRON-5-HV42 0240

LEFT REAR PASSENGER UPPER RIO 3-AXIS VELOCITY

TEST NUMBER: 030505-1

TRC INC

FRYSS 214 LEFT SIDE IMPACT



VELOCITY (KPH) X 4/5 = 0.100735

CHANNEL CURVE1 FILTER: 04 FREQ: 100

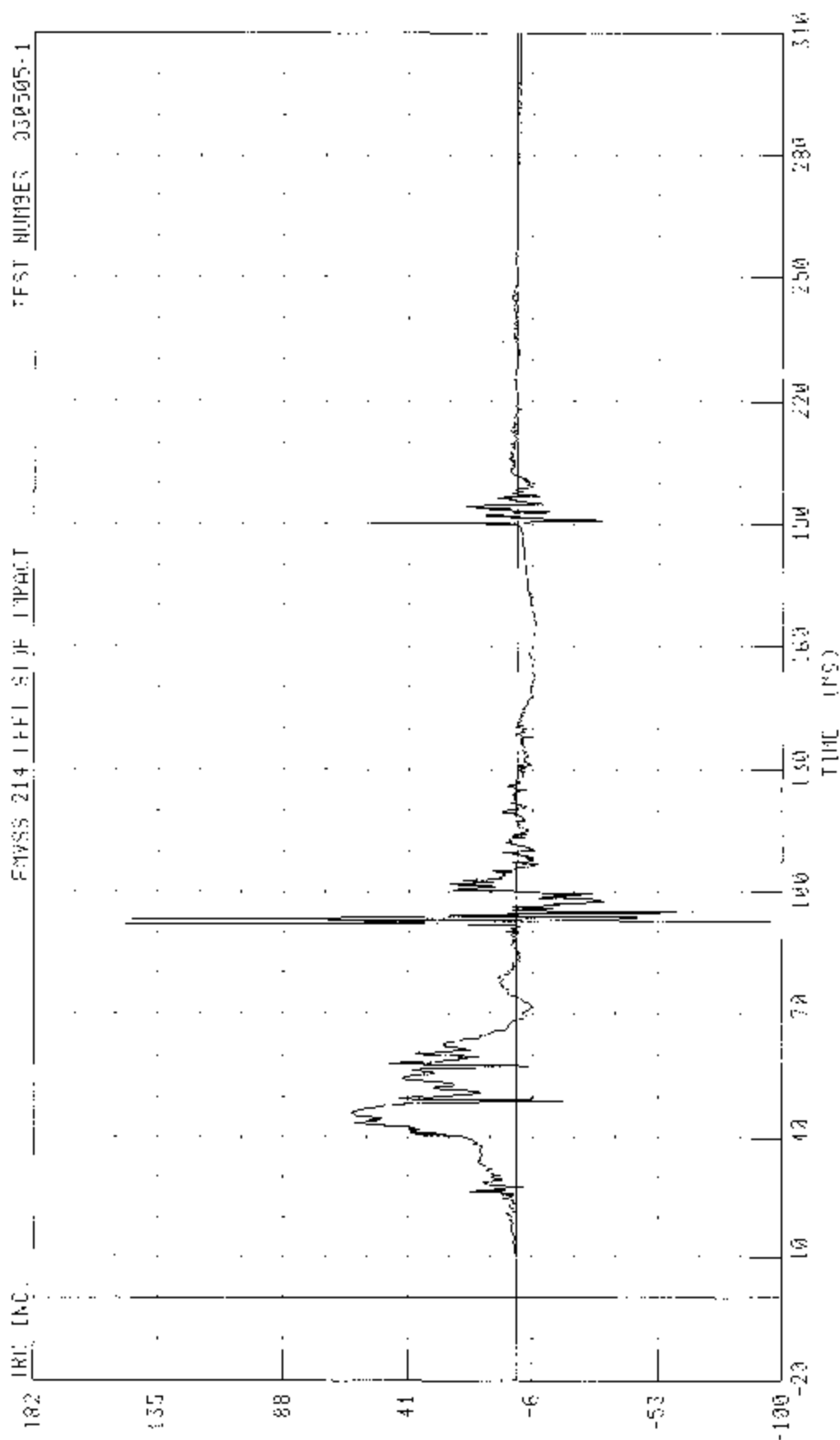
TIME (MS)

PLK 0000 40 51 60 70 80 90 100 150 200 250 300 310

55/23 MPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2007 MERCEDES-BENZ C240
 P-1 REAR PASSENGER LOWER RIB Y-AXIS ACCELERATION

TEST NUMBER 030505-1

EMVSS 214 LEFT SIDE IMPACT



ACCELERATION (G)

TIME (MS)

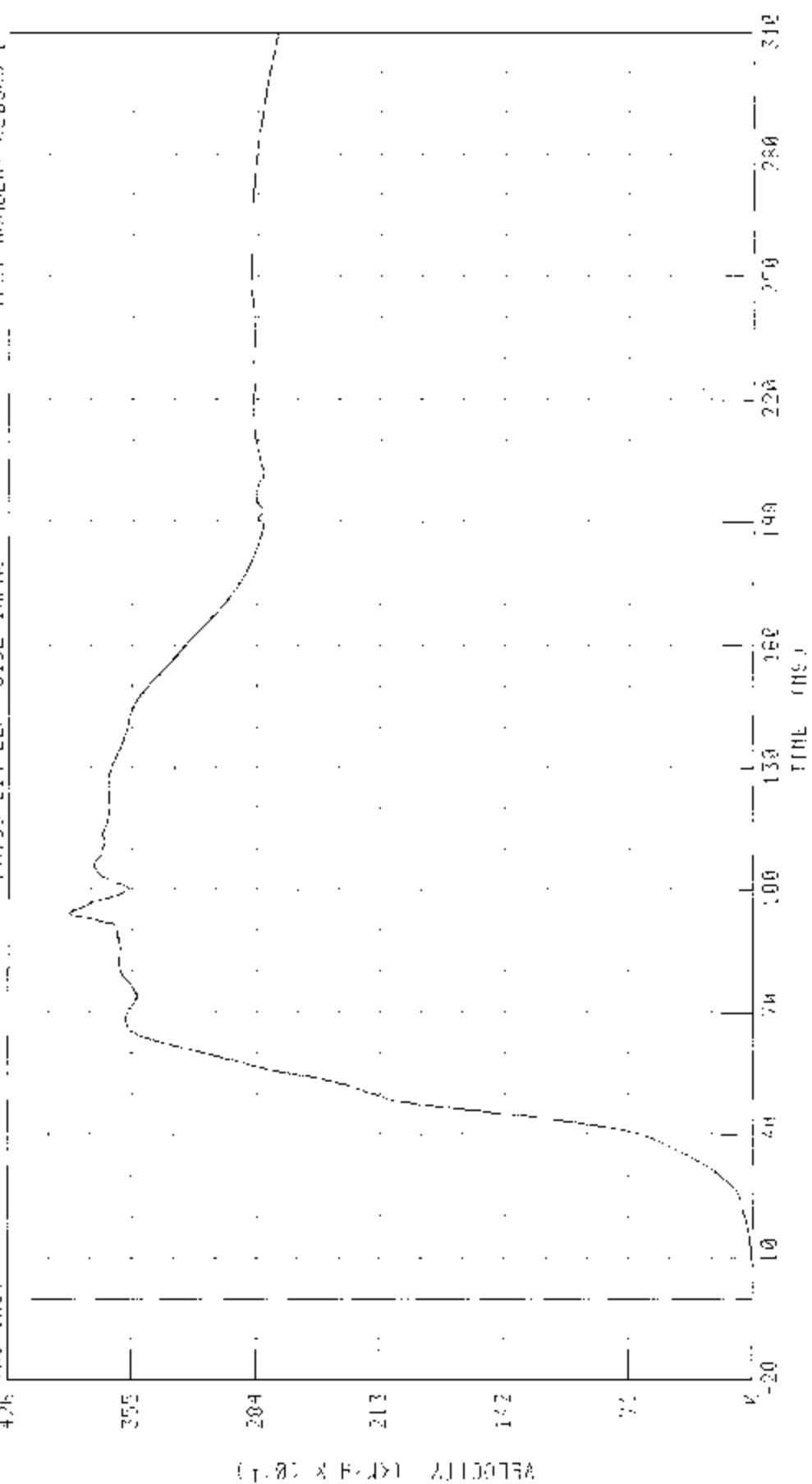
CHANNEL 1 RY04 FILTER 40 CLASS 10002

PER DATA 100 92 0 0 93 10 95 95.81 0 02 09 MS

55-23 RIV 20 DEGR- SIDE IMPACT MOVING DETONABLE CARTRIDGE INIC IFF SIDE OF 2013 IFRUEDFS-SEN7 0240

LEFT REAR PASSENGER LOWER RIB W-DXTS VELOCITY

TRC INC. _____ PHYS 214 LEFT SIDE IMPACT _____ IFSI NUMBER: K30505 1



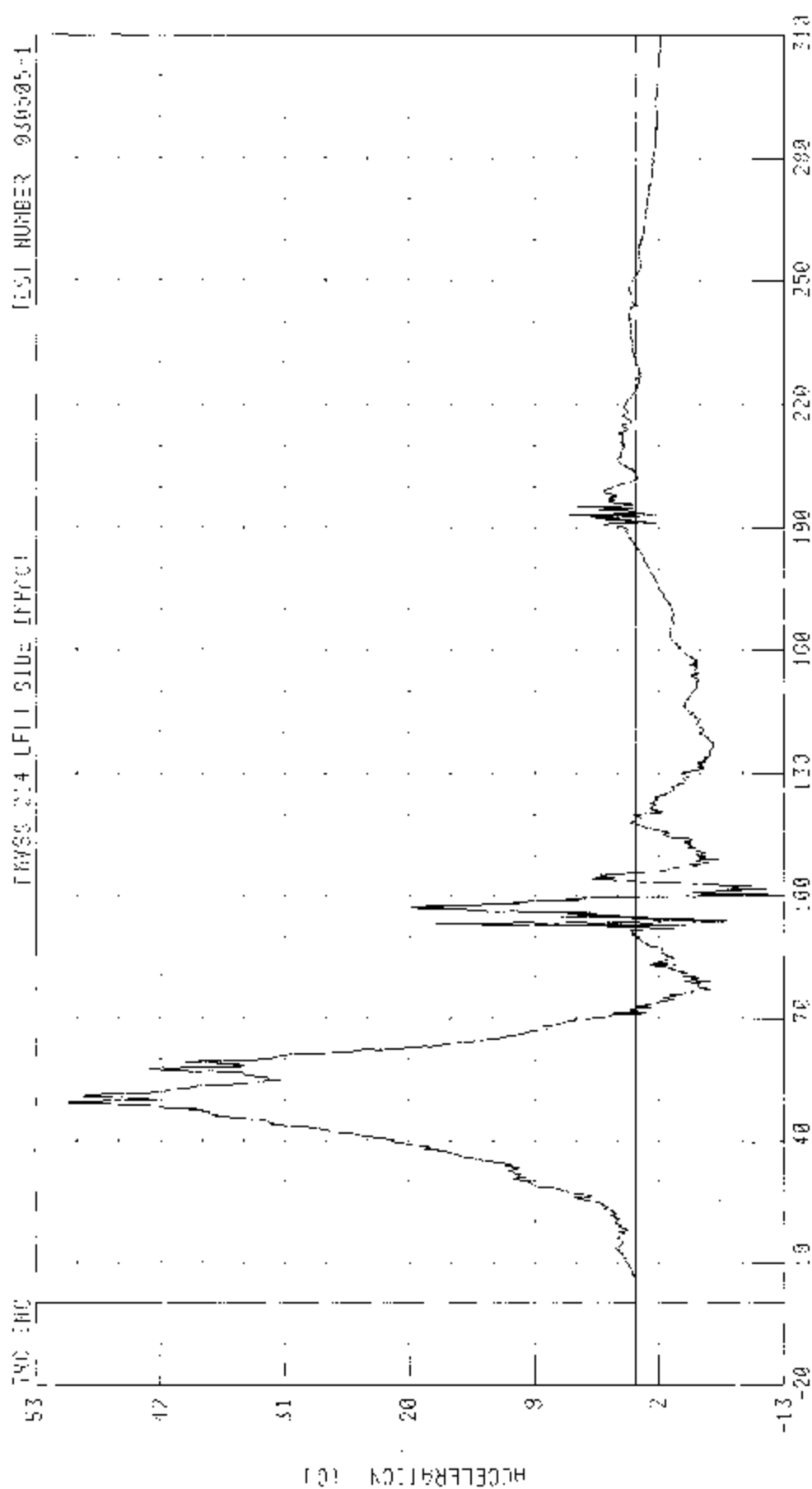
IMPACT LEVEL: 17113 OF CLASS 180 TIME (MSEC) 0100 0110 0120 0130 0140 0150 0160 0170 0180 0190 0200 0210 0220 0230 0240 0250 0260 0270 0280 0290 0300 0310 0320

55/28 KPH 20 INFGREF SIDE IMPACT MOVING IMPACTABLE BASELINE INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

LEFT REAR PASSENGER LOWER SPINE Y-AXIS ACCELERATION

TEST NUMBER 030505-1

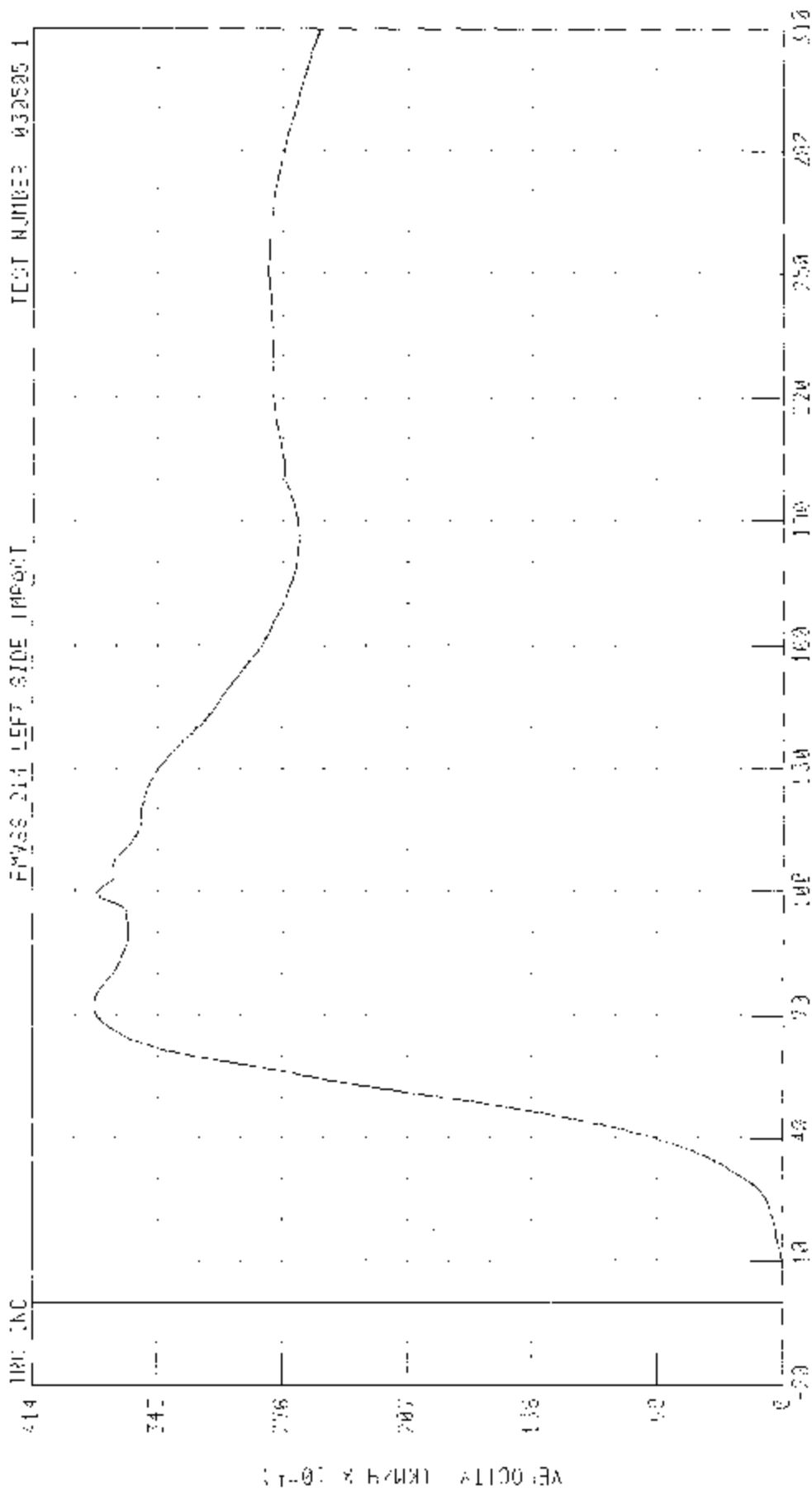
TRVSS 224 LEFT SIDE IMPACT



CHANNEL 12800 FILTER ON CLASS 1200

TIME (MS) 310 290 250 220 190 160 130 100 70 40 10

55-20 K9-1 00 DEGREE SIDE IMPACT UNIFORMS DEFORMAB. - RABIER) INTJ LEFT SIDE OF 2033 MERCEDES-BENZ C240
LEFT REAR PASSENGER LOWER GROUND AXIS VELOCITY



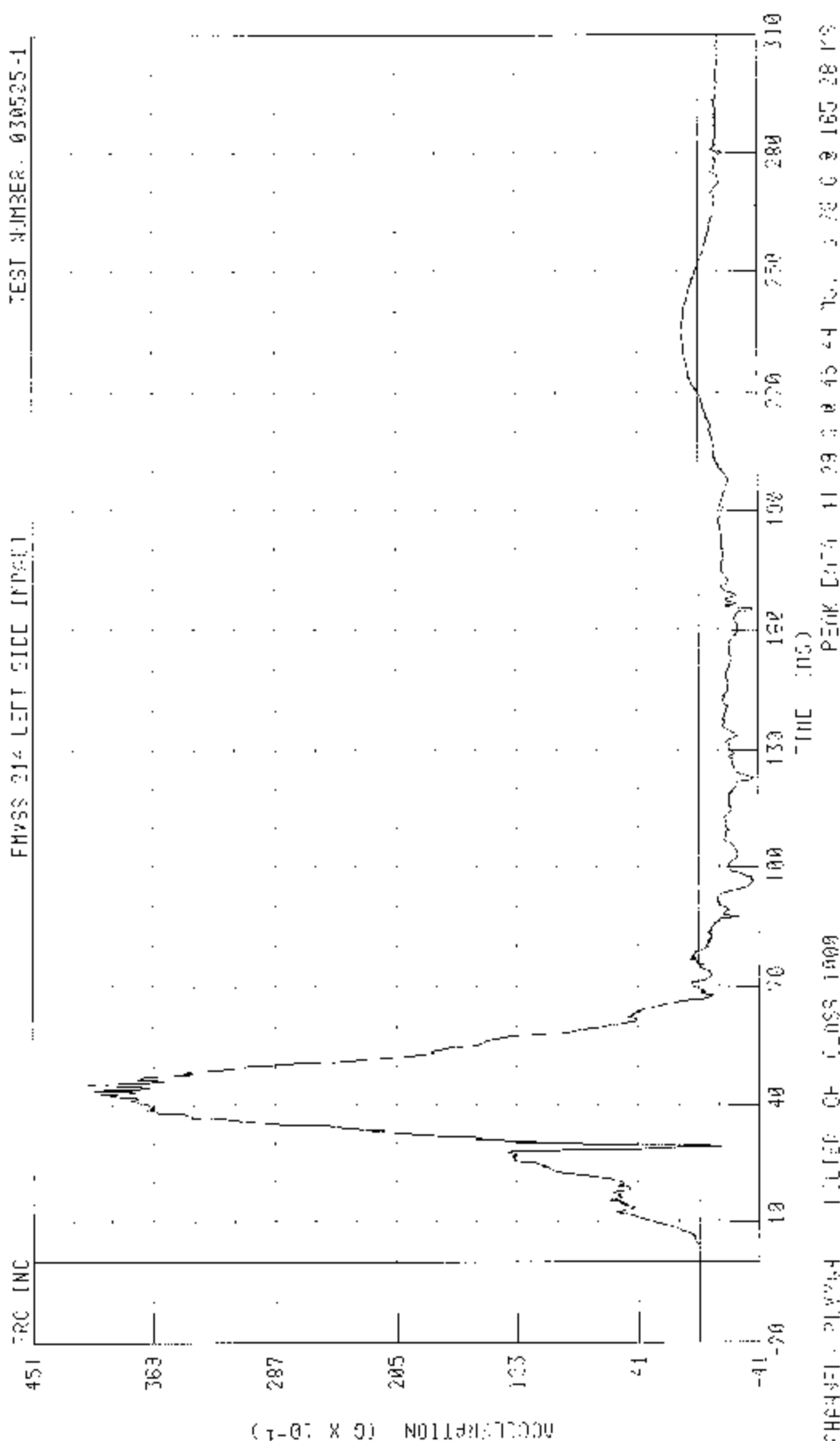
030505-1 FILTER ON CLASS 180 PLATE LINE 50 (1) K9-1 00 24 18 0 00 00 00 00

55.28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

LEFT REAR PASSENGER PELVIS Y-AXIS ACCELERATION

TEST NUMBER: 030505-1

FMVSS 214 LEFT SIDE IMPACT



(1-01 X 0) NO1100000000

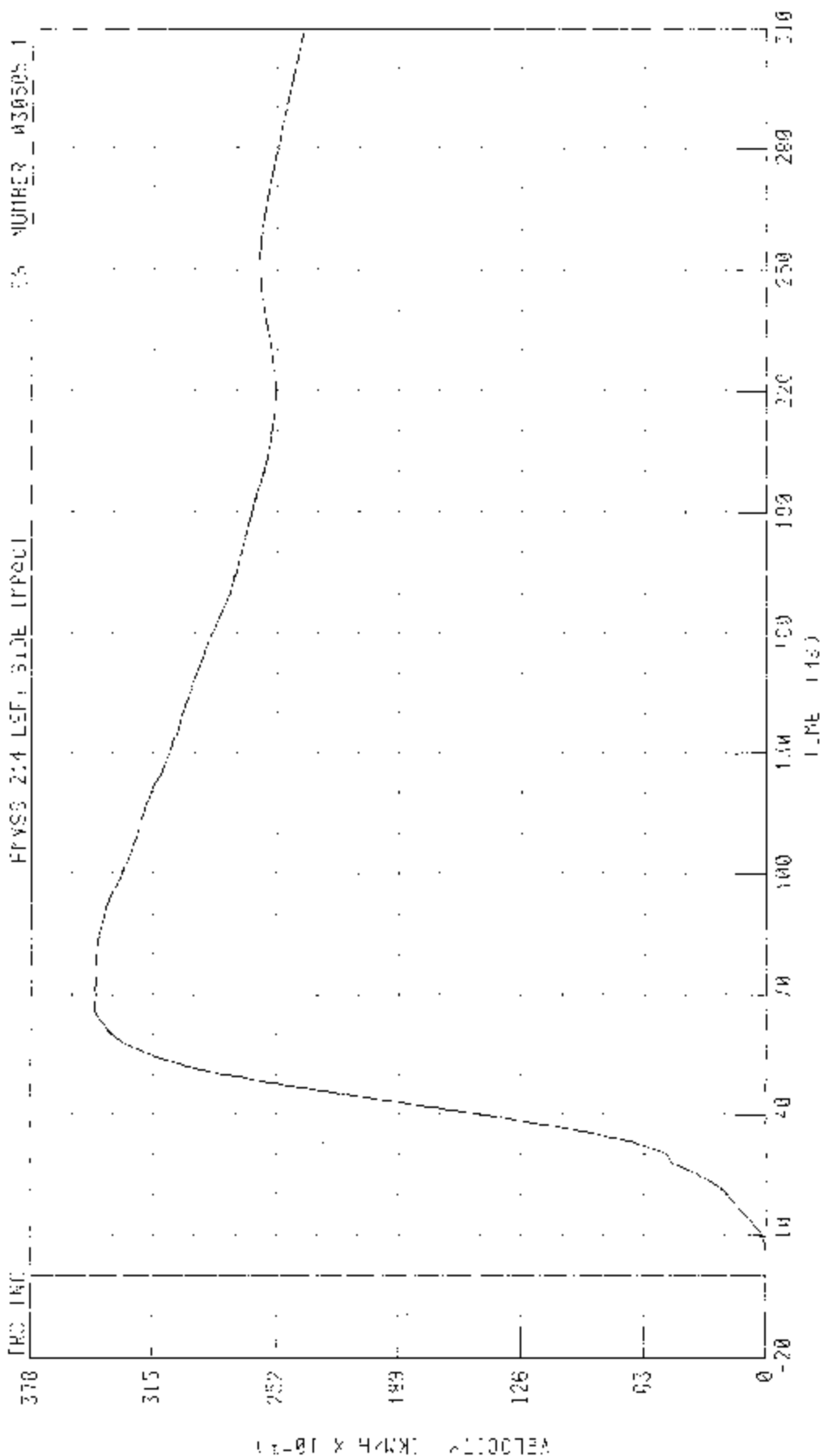
CHEVROLET PELVIS4 FILTER OF CROSS 1000

PEAK DATA 11 29 0 0 45 44 70. 3 20 0 0 180 28 179

50-28 MPH ON CHARGE SIDE IMPACT (MOVING DEFORMABLE SPRING) INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

LEFT REAR PASSENGER PELVIS V-AXIS VELOCITY

FRVSS 214 LEFT SIDE IMPACT 35 NUMBER 030505-1



TIME (MS)

PEAK DATA 74 32 KMH 0 67 34 MS 0 00 KMH 0 0 00 MS

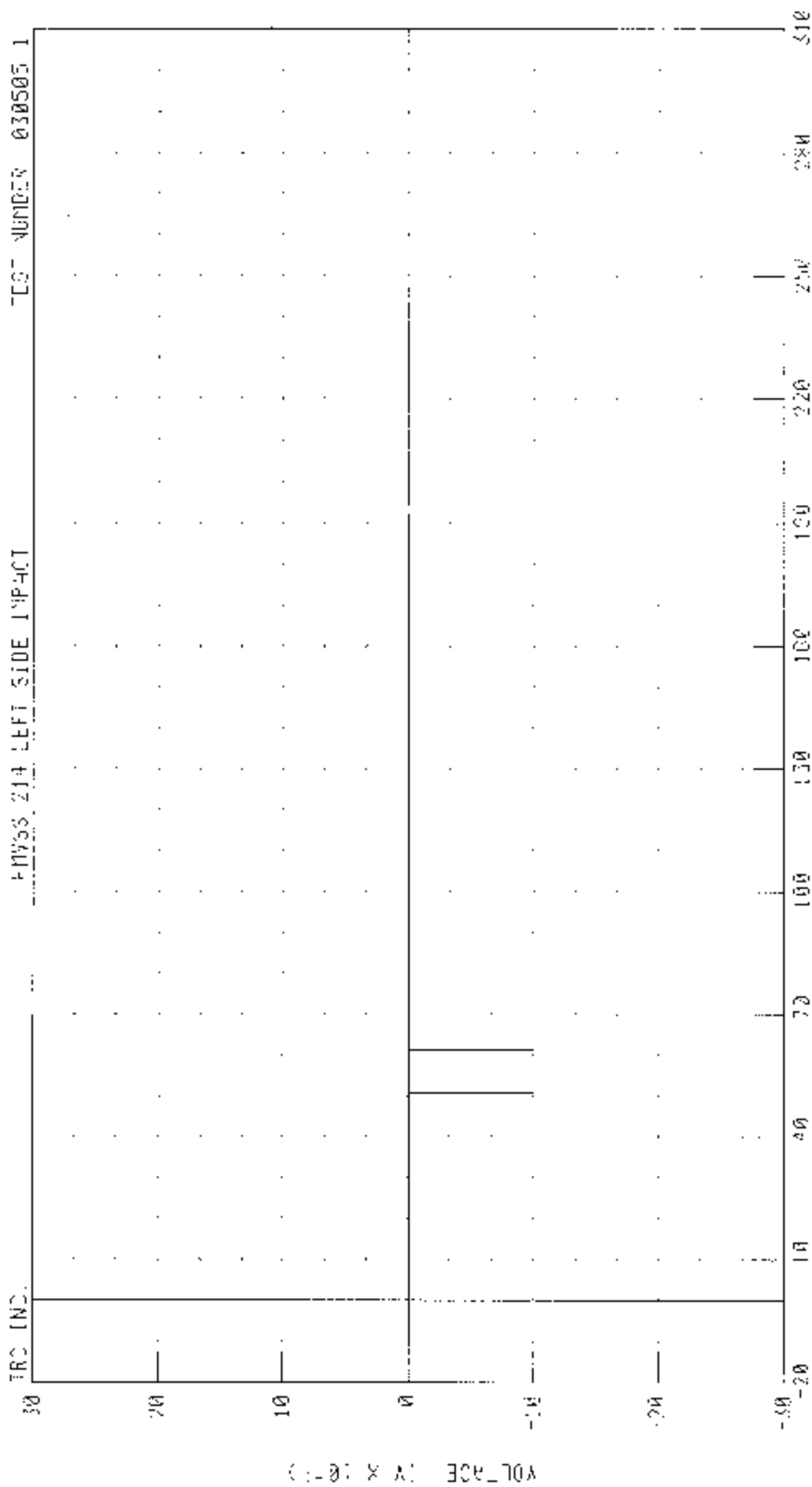
CHANNEL 214V1 FILTER ON GAIN 180

55 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER SHOULDER CONTACT SWITCH

TEST NUMBER 030505 1

PHYS 214 LEFT SIDE IMPACT

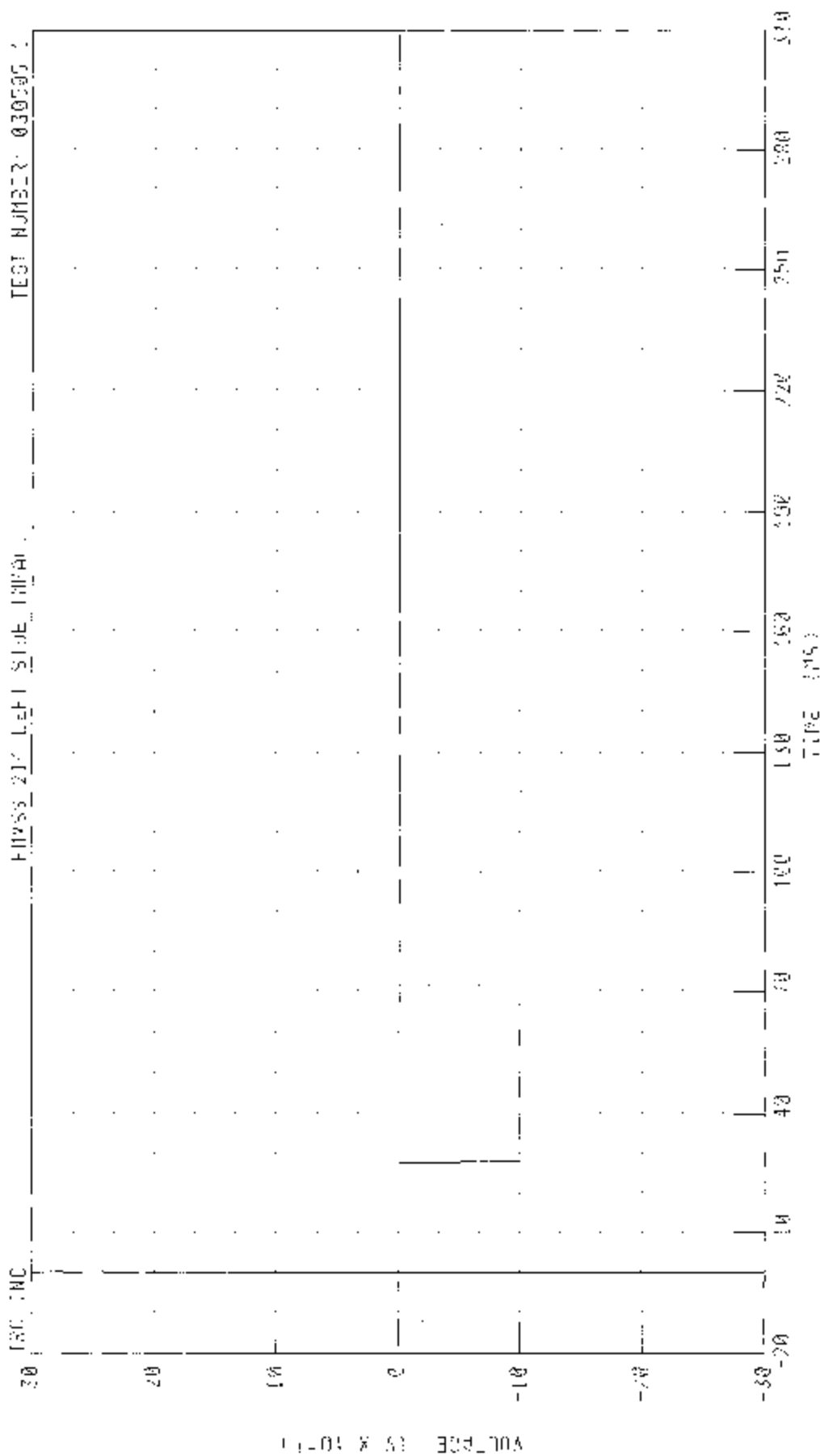


CHANNEL 51C14 FILTER 01 C-ASS 1000

PEAK 011 0 00 0 0 00 MS 1 00 0 0 50 80 MS

55/28 KPH 30 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER PELVIS CONTACT SWITCH



TEST NUMBER: 030505

CHANNEL PELV14 FILTER 50 0.450 1000

DATE: 04/04/00 TIME: 10:27:00

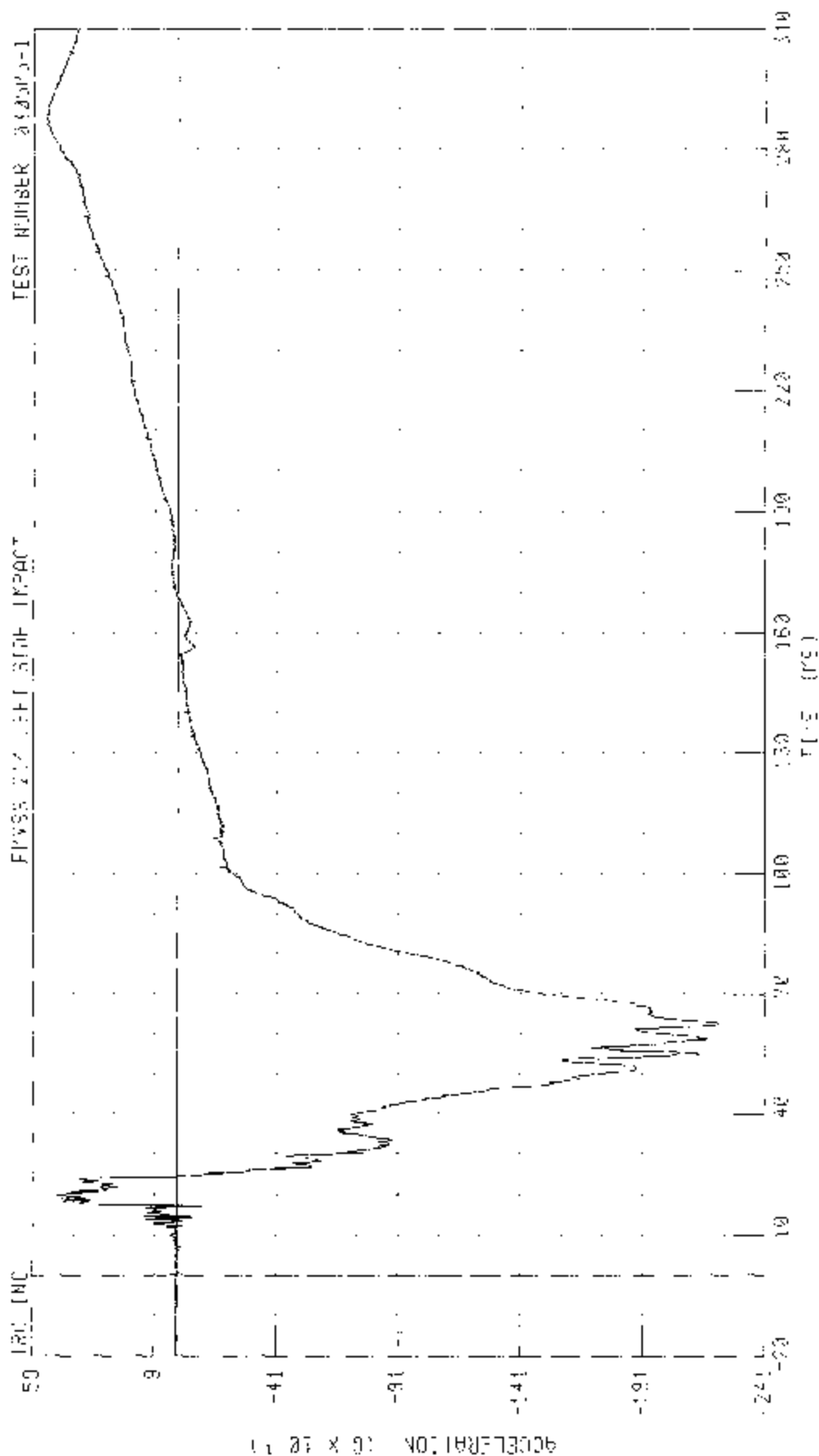
Driver and Passenger Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant

55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARREL) INTO LEFT SIDE OF 2000 LERSEDES BENZ C240

DRIVER HEAD X-AXIS RESONANT ACCELERATION



CHANNEL HEADRI F0178 04 CLASS 1000

FILE DATA: SDR 6 4 285 24 MS, -22 33 1.3 00 58 MS

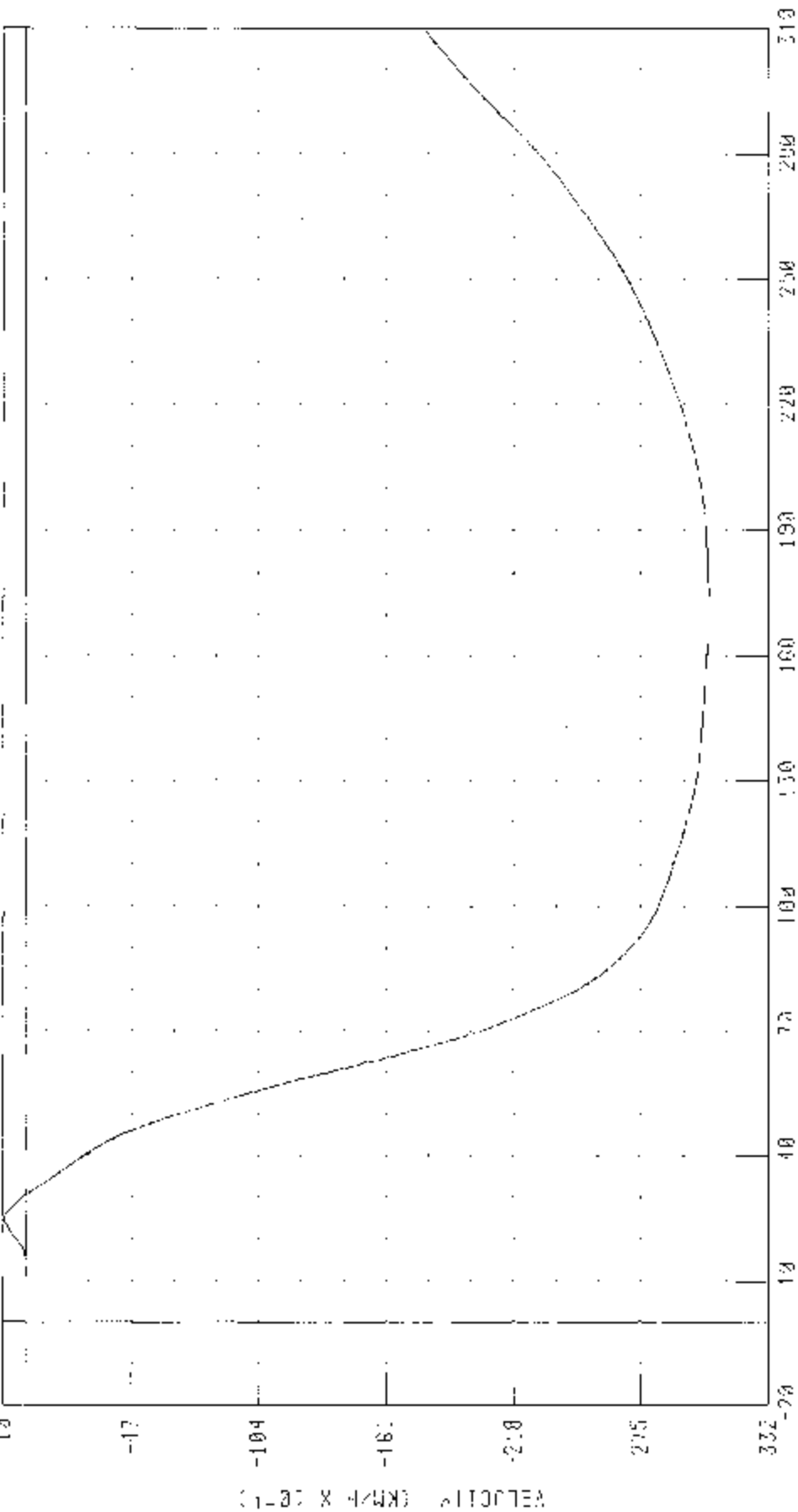
55/23 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C740

DRIVER HEAD X AXIS REBOUNDING VELOCITY

TEST NUMBER 030505-1

FINISH 214 LEFT SIDE IMPACT

TBC INC



TIME (MS)

CHANNEL HCDXVI FILTER CH. CLASH 180

PLATE DATA 0.96 GPH + 0.28 MP (S) -0.53 ZHPS @ 180 HZ

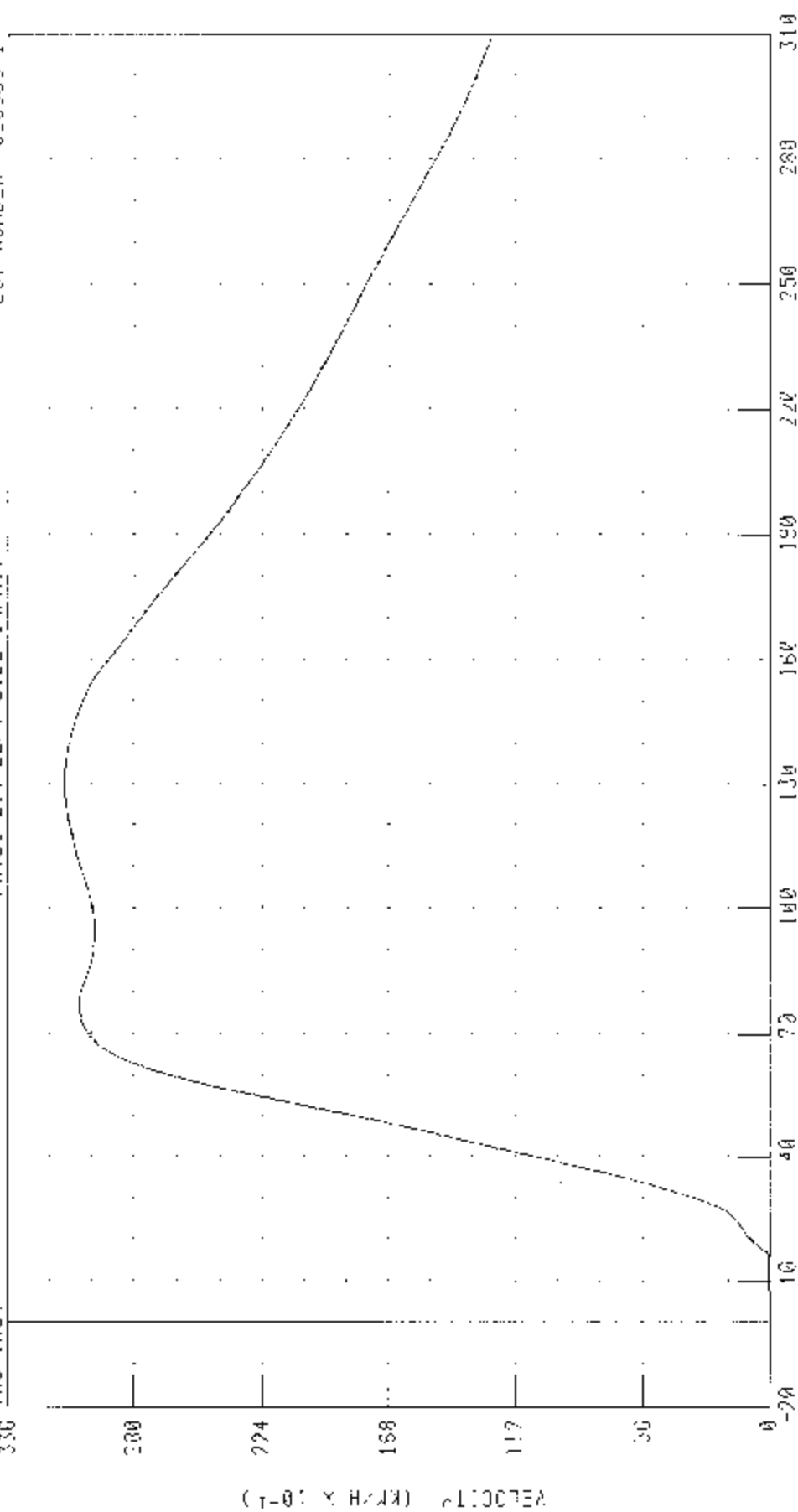
55-23 K-1 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDS-BENZ 1240

DRIVER HEAD Y-AXIS REBOUND VELOCITY

TEST NUMBER 030505 1

FMSS 214 LEFT SIDE IMPACT

TRC INC.



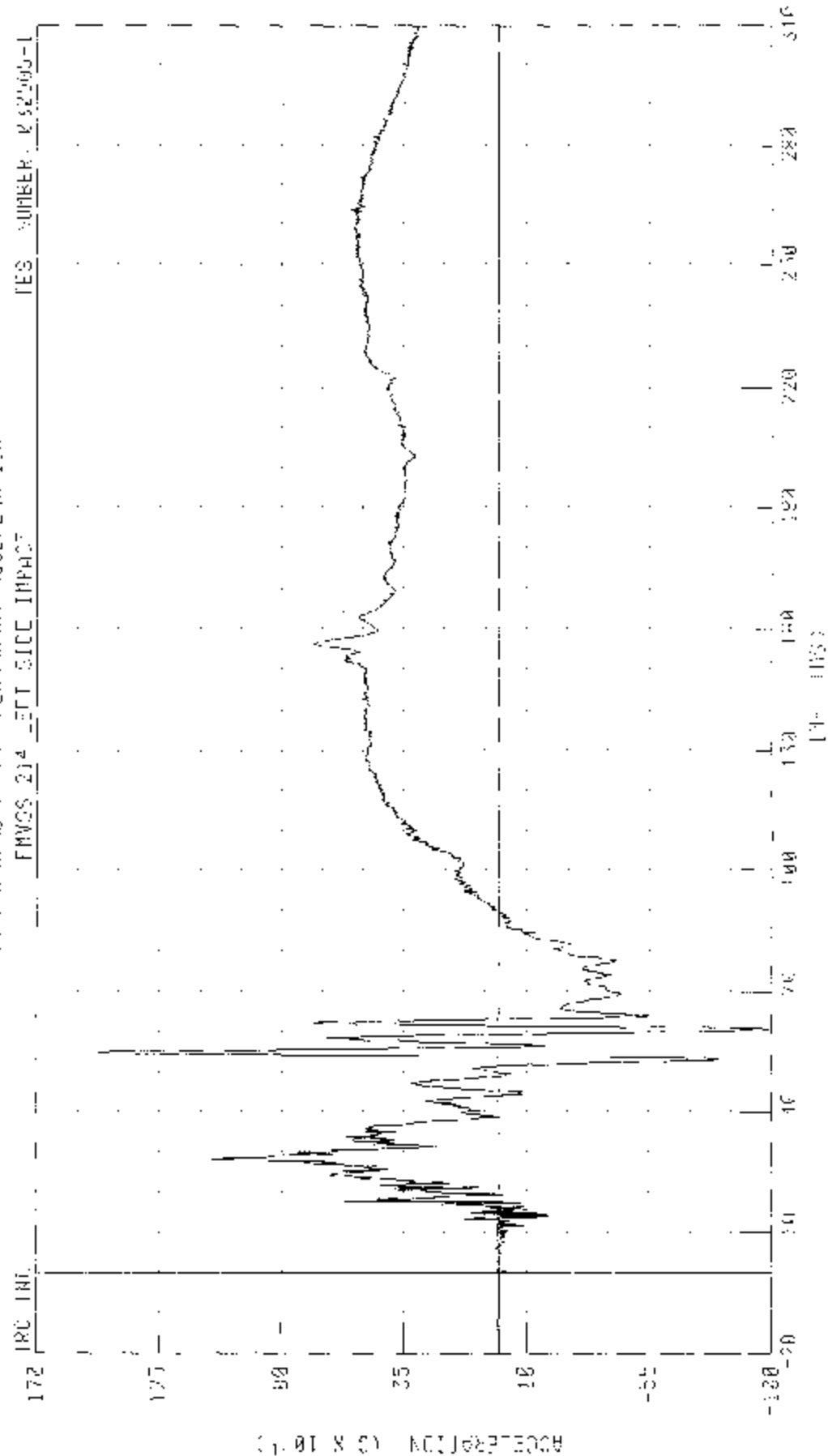
TIME (MS)

CHANNEL H-DY21 FILTER CH CLASS 180

FILE DATA Y 05 401-0 130 40 P.S. 0 000 PPH 0 3 52 45

55/23 KPH 90 DEGREE SIDE IMPACT (MOVING 01-ORANGE BARRELS) INTO LEFT SIDE OF 200A MERCEDES BENZ C240

DRIVER HEAD Z-AXIS REDUNDANT ACCELERATION



TEST NUMBER: R52505-1

PEAK DATA: 1474 0.3 34.88 MS. 0.89 1.8 0.0 04.10

CHANNEL: HEAD/RS FILTER: ON LOSS: 1000

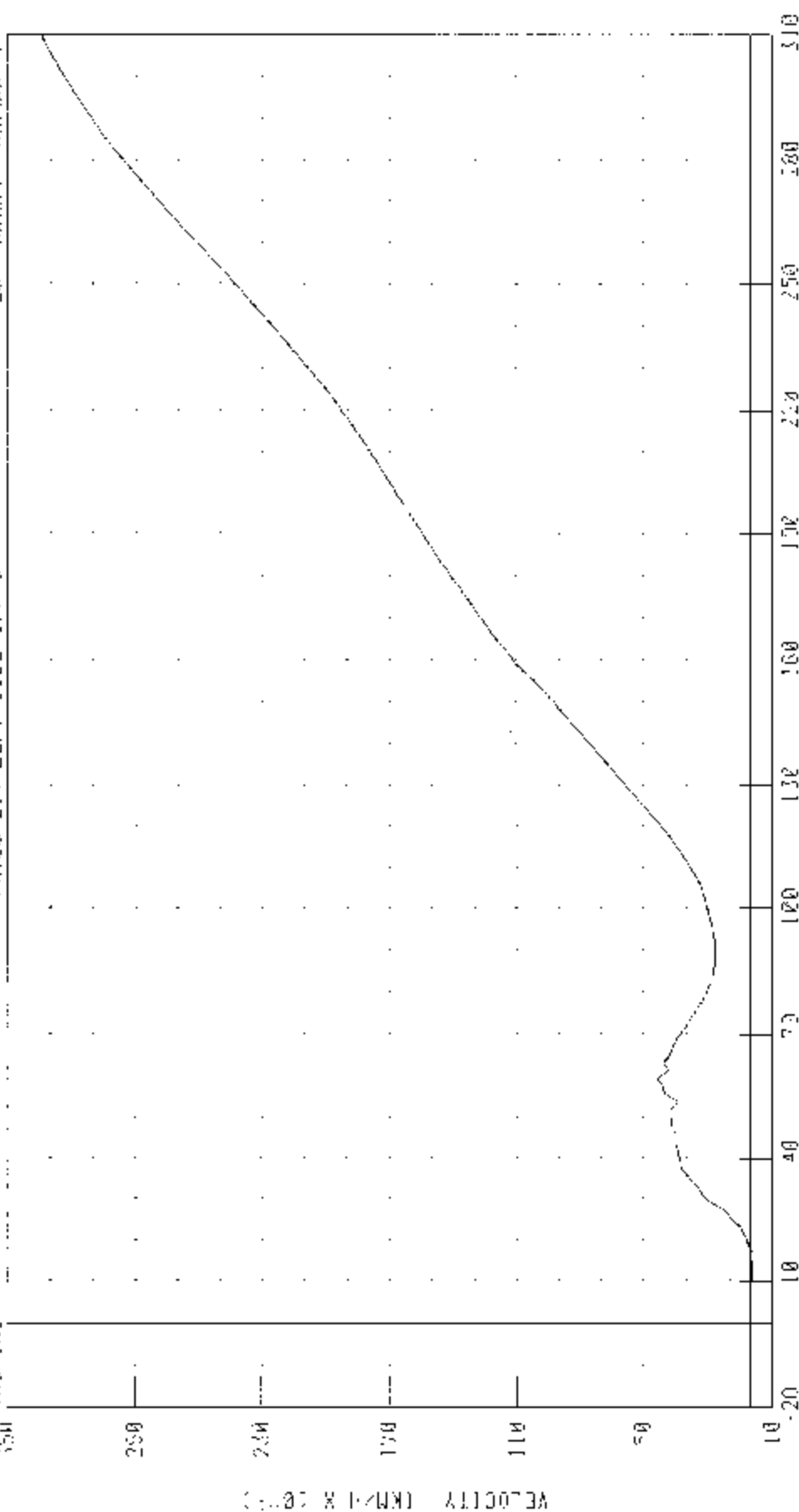
55/28 MPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER HEAD Z-AXIS RECUKJANT VELOCITY

180 INCH

PHYSO 214 LEFT SIDE IMPACT

TEST NUMBER: 030505-1



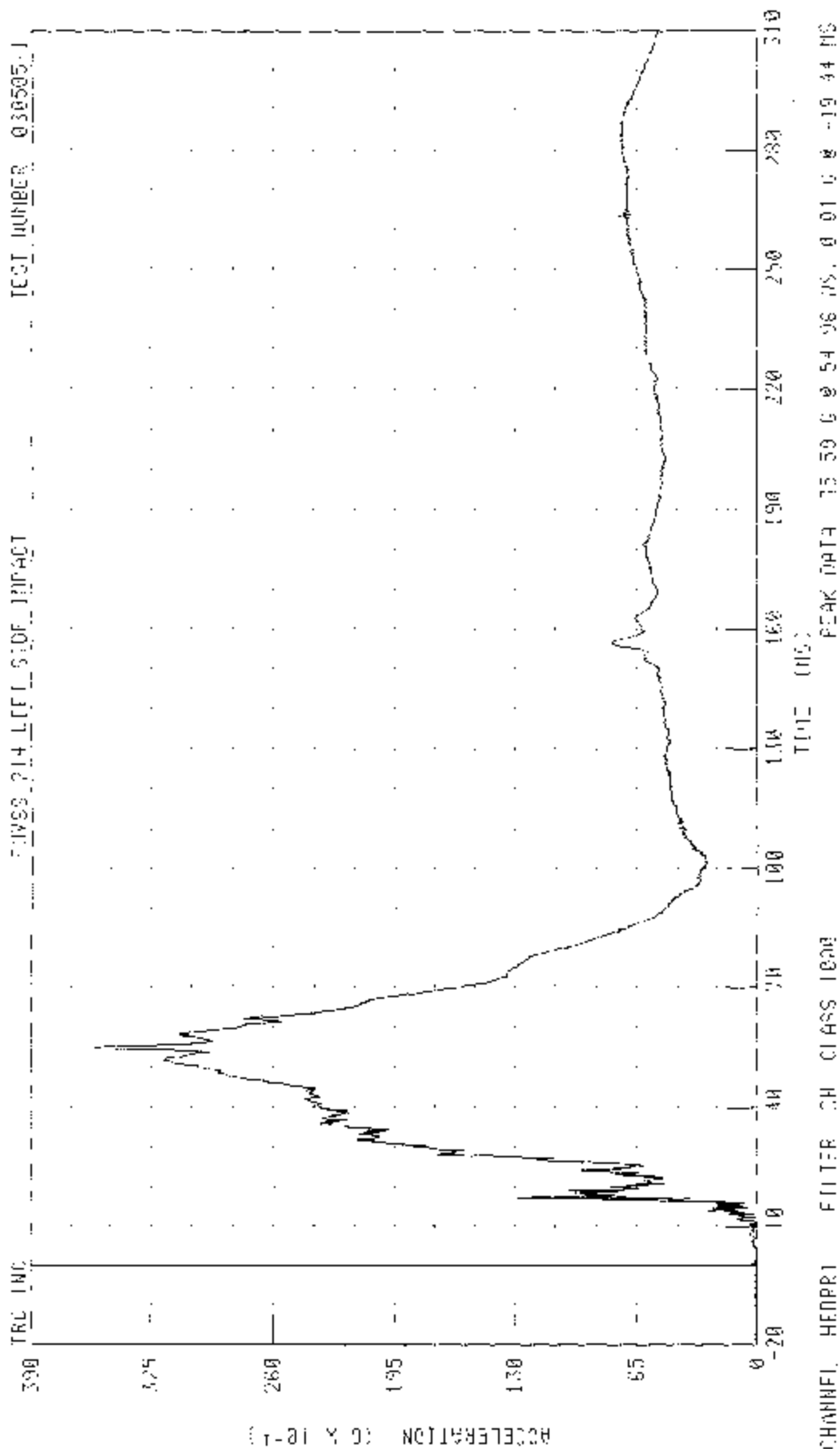
CHANNEL: HEAD/VE

TIME (MS)

PEAK DATA: 14.18 MPH @ 142.00 MS, -0.08 G @ 14.18 MS

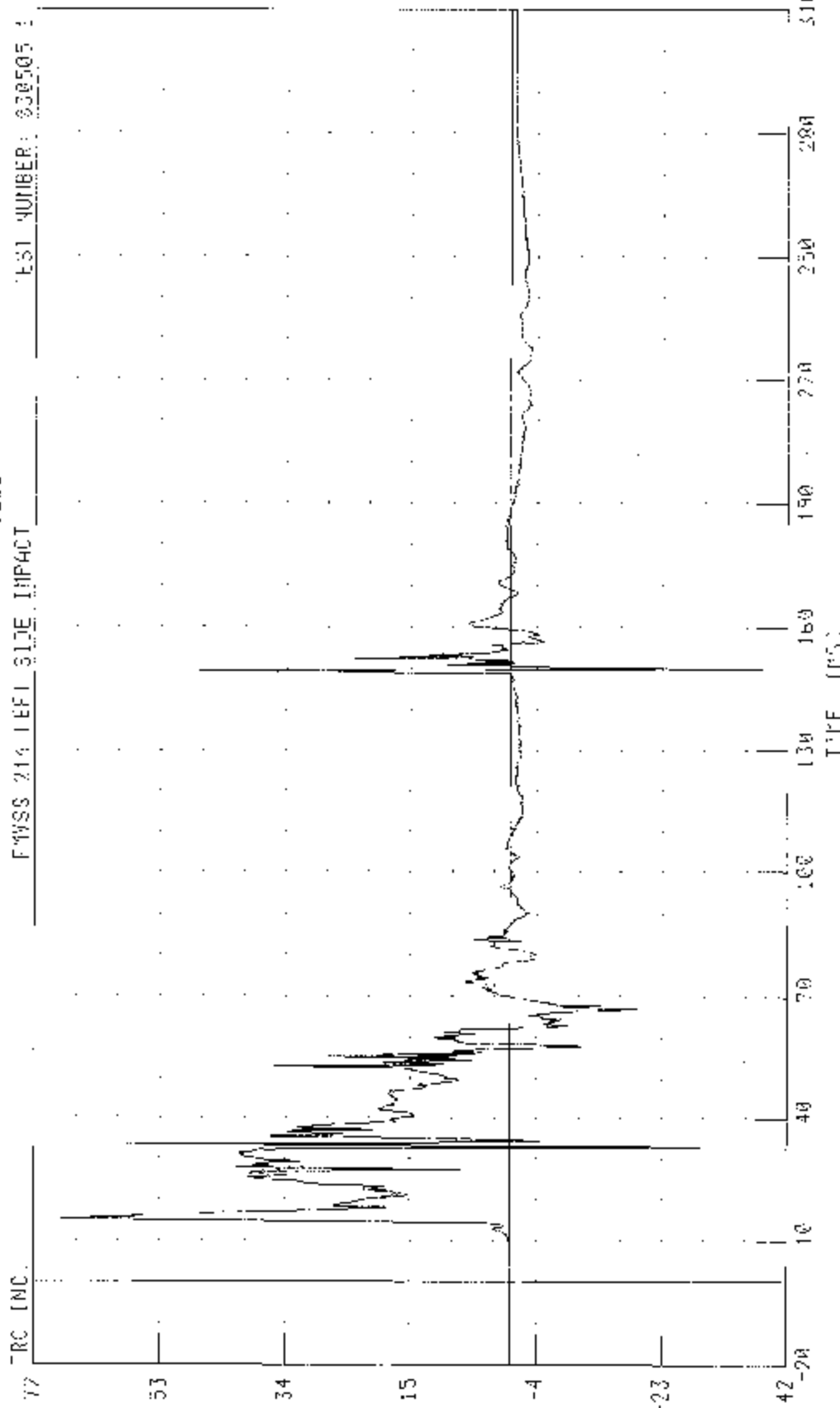
55/26 NP11 20 DECRET SIDE IMPACT (MOVING REFURABLE BARREL) INTO LEFT SIDE OF 2003 HFC0F0FS-RENZ C240

DRIVER HEAD REBOUND ANT REBOUND ANT ACCELERATION



55-28 KPH 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES-BENZ 1240
 DRIVER UPPER RIB Y-AXIS REDUNDANT ACCELERATION

TEST NUMBER: 030505-1



PLAY DATE: 03-08-00 10:28 AM, -38 35 0 0 100 03 18

CHANSFI URVRI FILTER: C-1 CLASS 1040

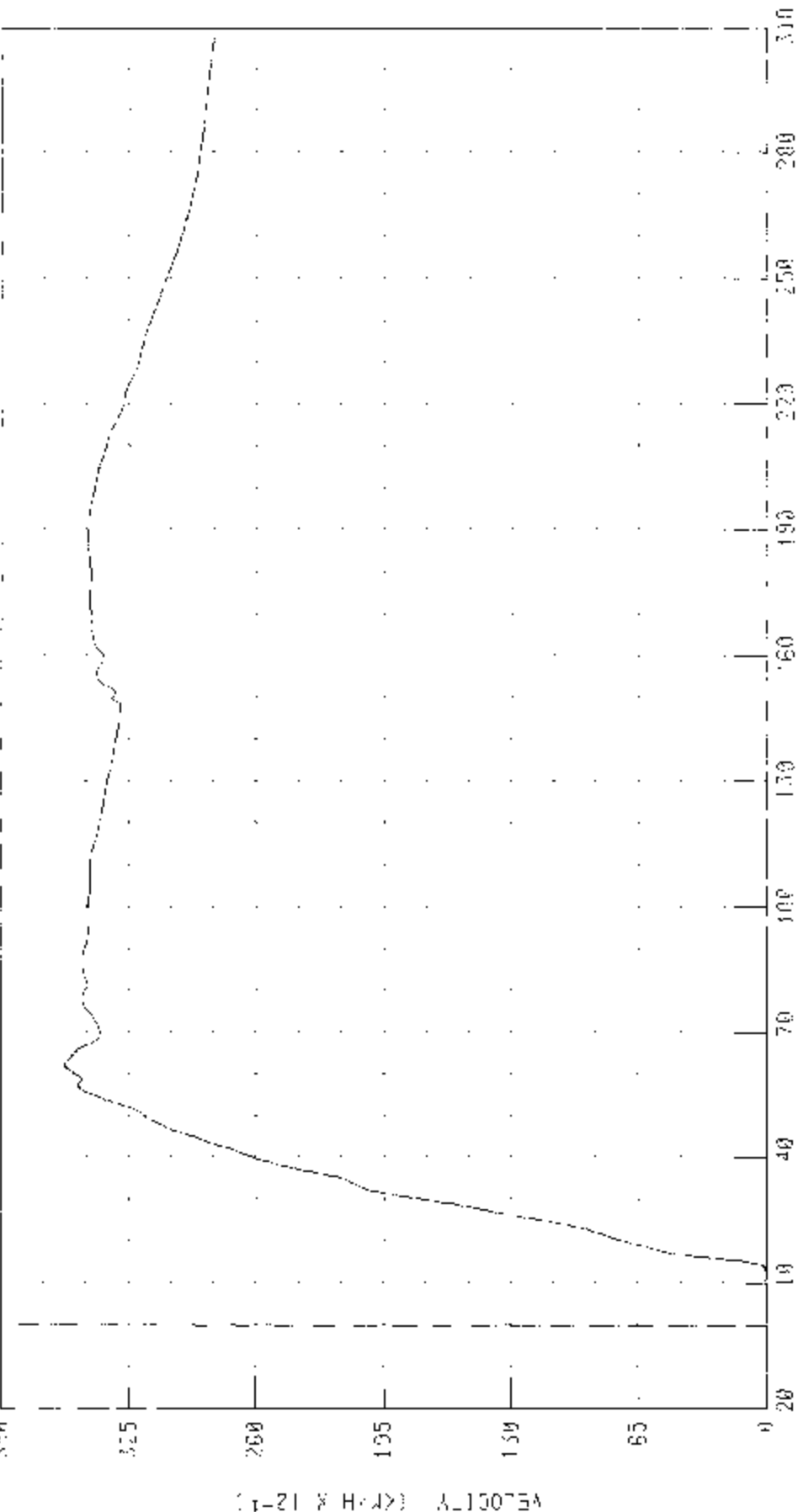
55/29 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCURY S-380Z 1/24/00

DRIVER SEVER RIG - AXIS VELOCANT VELOCITY

TEST NUMBER: 032505

EMISS 204 LEFT SIDE IMPACT

120 ENC



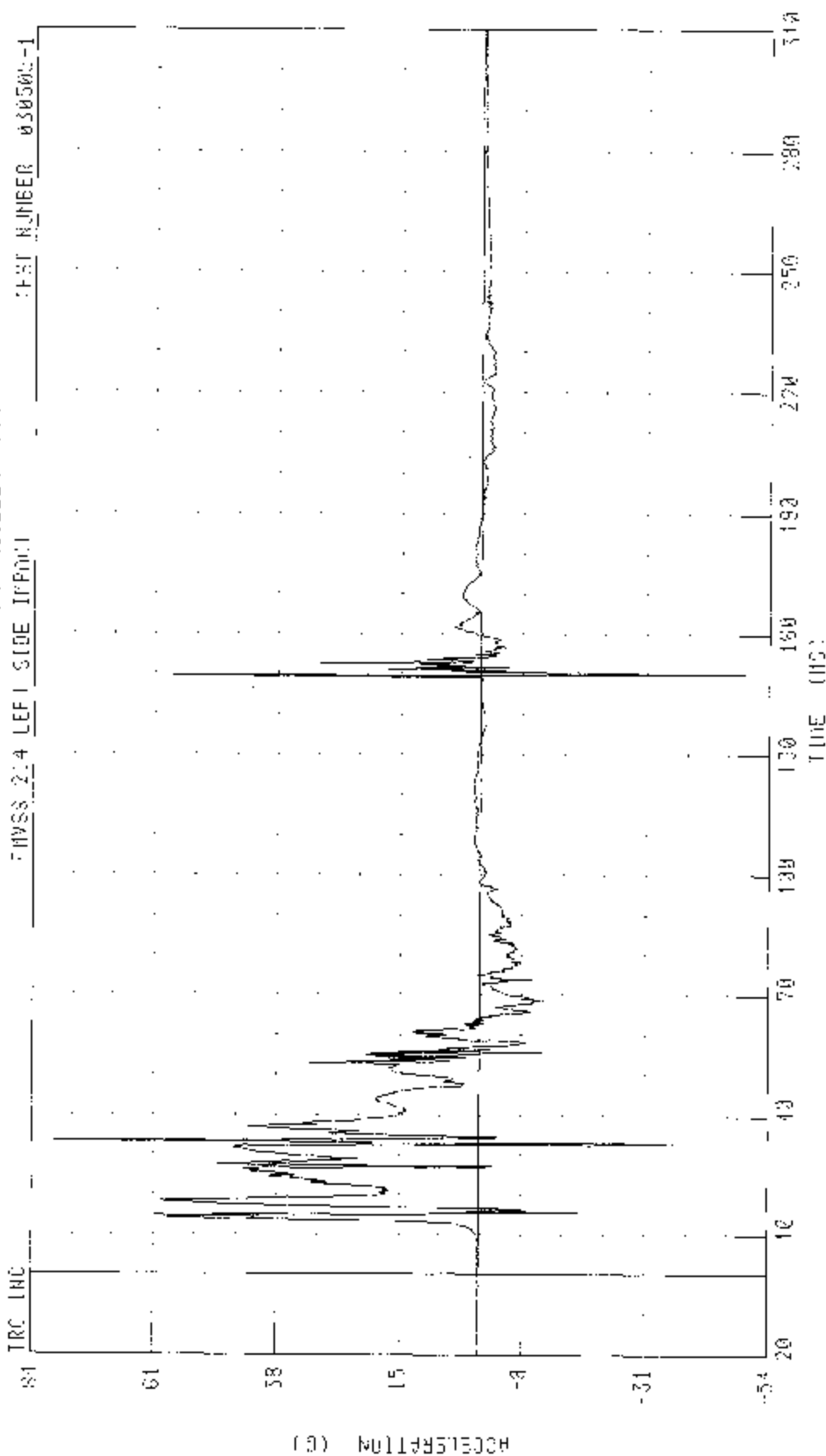
120 ENC

EMISS 204 LEFT SIDE IMPACT

030505-1

55.28 KPH 20 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES BENZ 124H

DRIVER LOWER RIB Y-AXIS REDUNDANT ACCELERATION



PEAK DATA 79.97 G @ 63.35 MS, -19.30 @ 159.92 MS

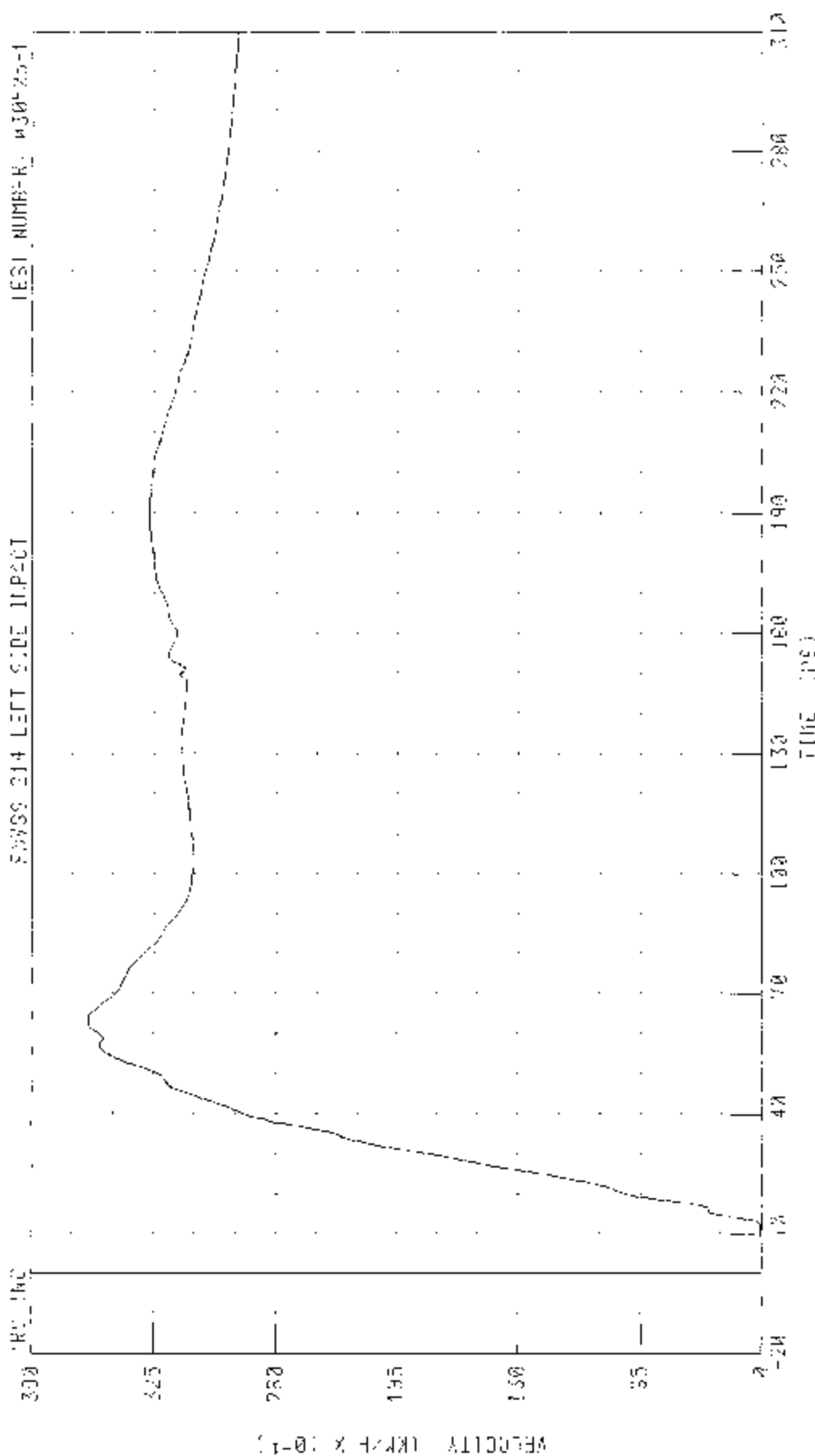
CHANEL L_RYR1 FILTER CH CLASS 120A

55/20 APII 90 DEGREE SIDE IMPACT MOVING DEFUELABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

DRIVER LOWER R10 Y-AXIS REBOUND VELOCITY

TEST NUMBER: WJ0425-1

SWISS 214 LEFT SIDE IMPACT



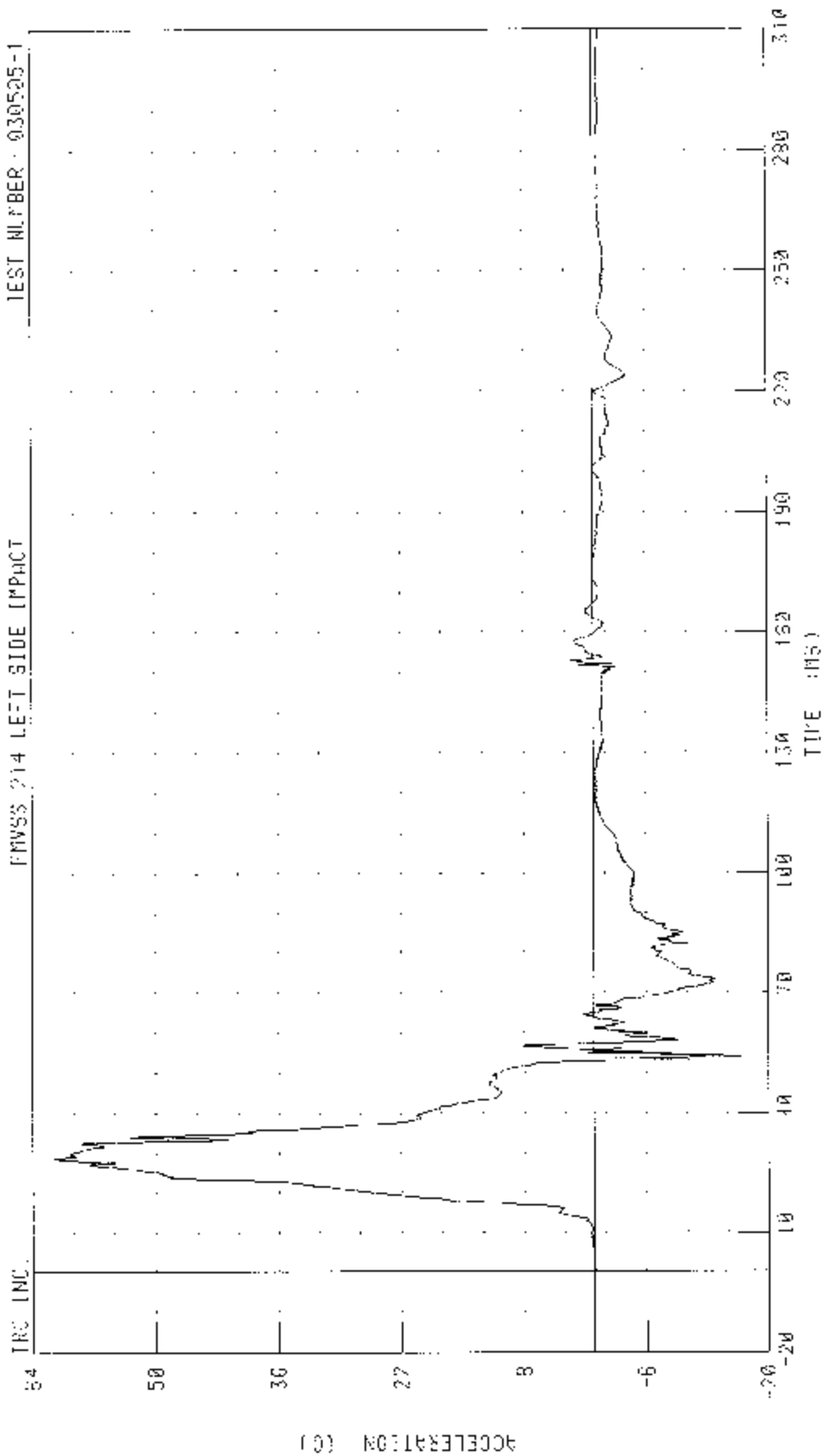
CHANNEL EL209V1 FILTER ON GROSS 120

REAR DATA 25 04 40 14 50 00 75, 9 00 26 11 9 4 55 40

50/23 074 90 DEGREE SHOT IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2403 MERCH DRS-REV2 0210

DRIVER LOWER SPINE Z-AXIS REDUNDANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER - 030525-1

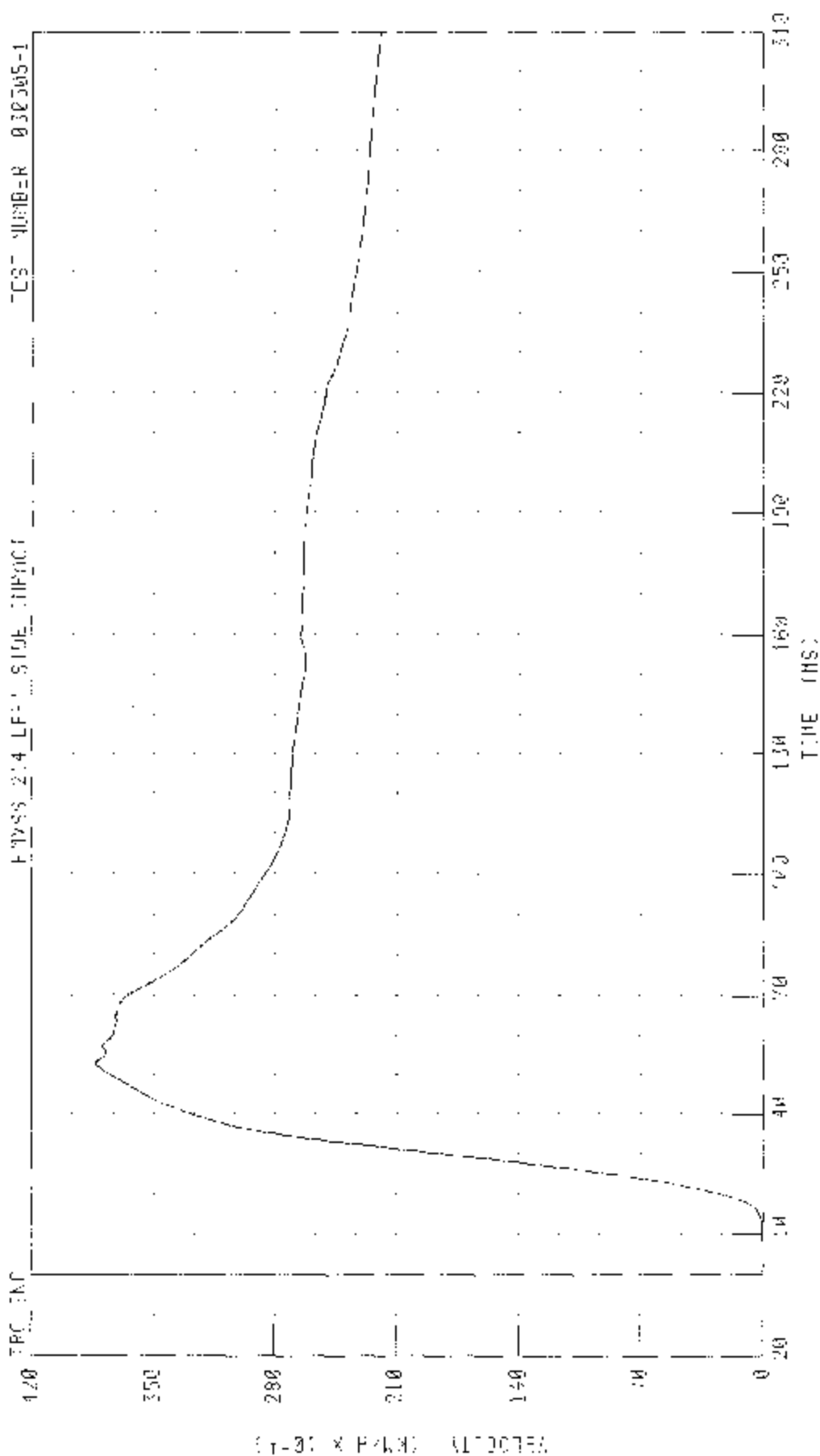


CHANNEL 112VZ FILTER: CH CLASS 1000

PEAK DATA: 62.63 V @ 10.12 MS, -18.34 G @ 134.14 MS

55/23 VP-1 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER: INIJ LEFT SIDE OF 2003 MERCEDES-BENZ C240

DRIVER LOWER SPINE Y AXIS REDUNDANT VELOCITY



SLAP CASE 30 02 2000 02 00 15.0 40 00 15.0 43 15

CHANNEL 12VVI FT PER CH CLASS 180

35000 KPH 90 DEGREE SIDE IMPACT INVOLVING DEFENDABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

DRIVER PELVIS Y-AXIS REDUNDANT ACCELERATION

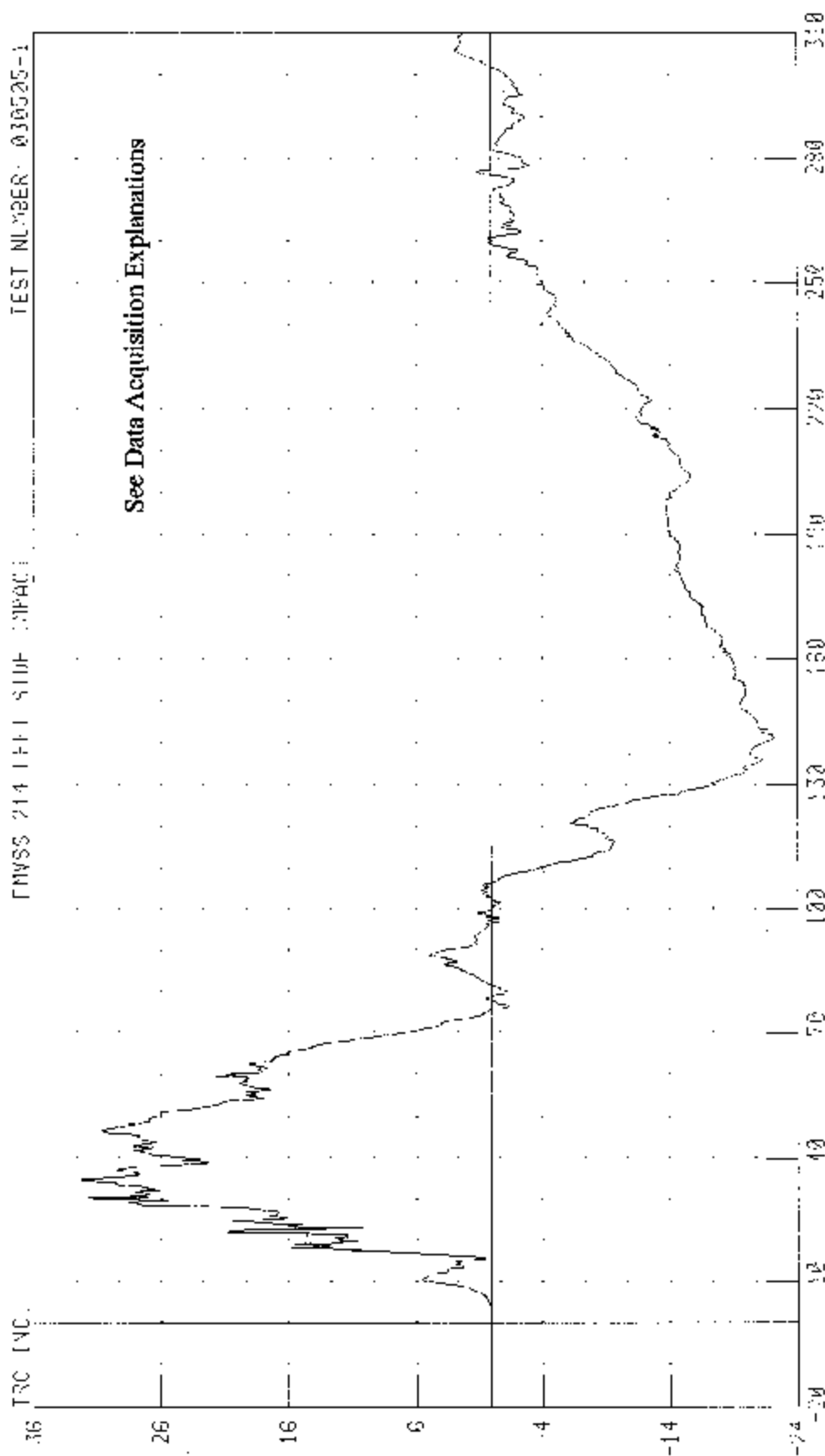
TEST NUMBER: 030505-1

FMVSS 214 LEFT SIDE IMPACT

TRC INC.

See Data Acquisition Explanations

ACCELERATION (G X 10⁻³)



CHANNEL: PEVYR1 FILTER: CH GROSS 1000

PEVYR1 DATA 323.54 3 0 34 92 99. 222 07 0 M 141 44 NS

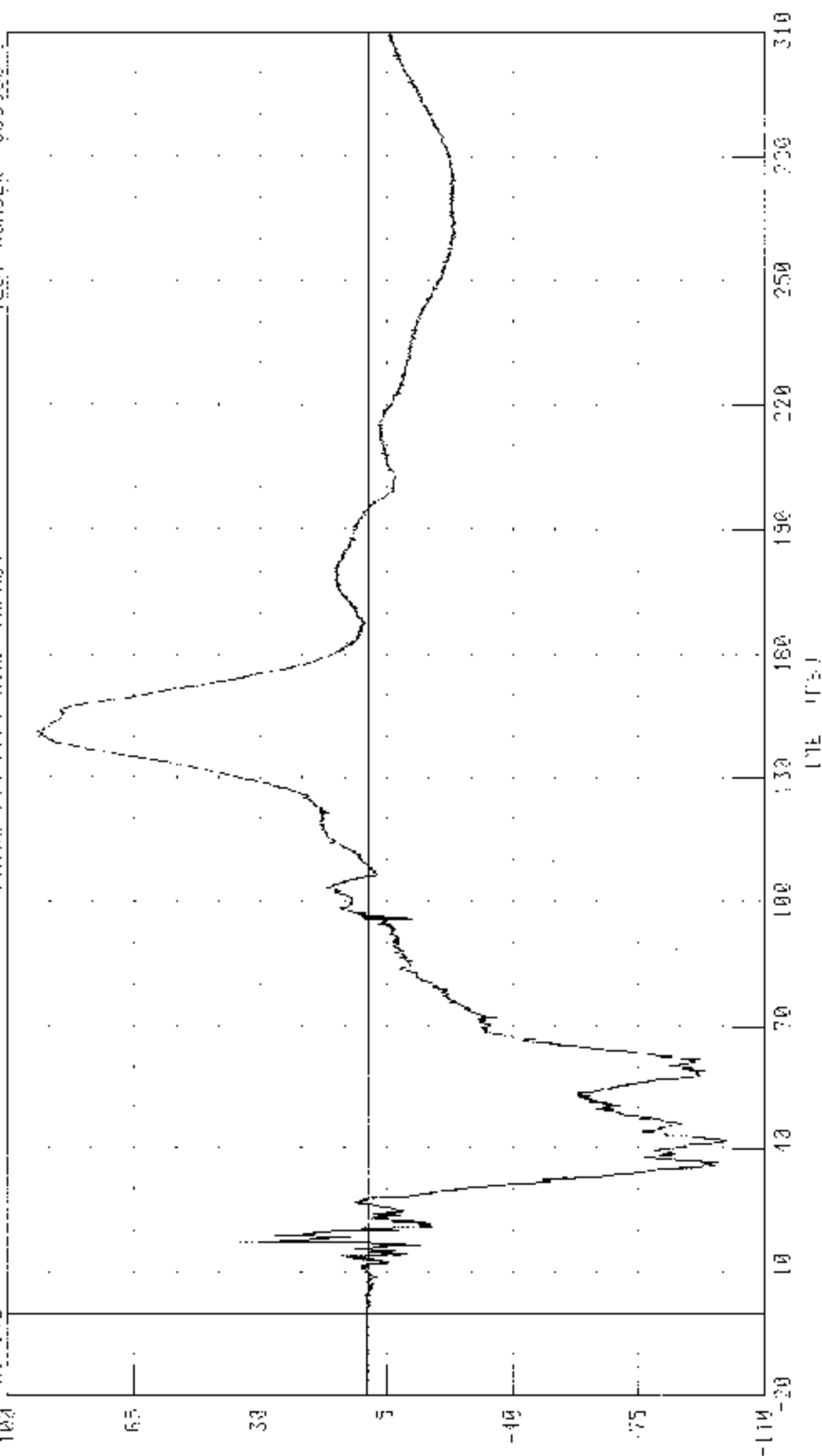
55:28 KF4 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

155 REAR PASSENGER HEAD X AXIS REDUNDANT ACCELERATION

TRC 156

PHASE 24 LEFT SIDE IMPACT

TEST NUMBER 030505-1



CHANNEL: VELX21 FILE: CH CLASS 1000

TIME (MS)

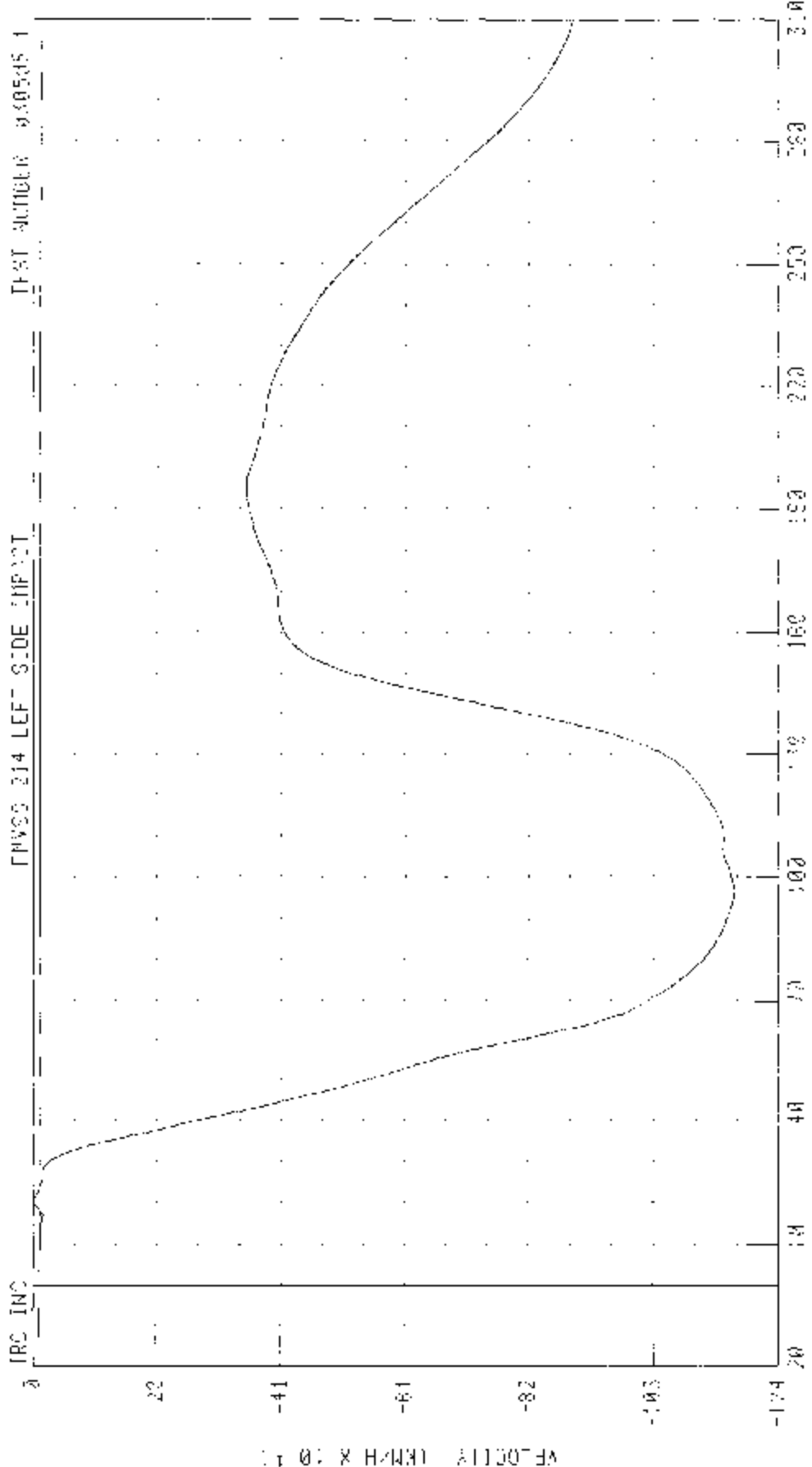
PEAK DATE: 9 16 00 140 17 MS; -9 96 1 0 41 97 MS

55-22 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 202A FORD FUSION 3-DOOR 1.24L

LEFT REAR PASSENGER HEAD X-AXIS HORIZONTAL VELOCITY

TEST NUMBER 030505-1

FMVSS 214 LEFT SIDE IMPACT



CHARACTERISTICS: LOWER OF CLASS 190
 PEAK DATE: 11/10/90 10:30:30 MS, -11/10/90 10:30:30 MS

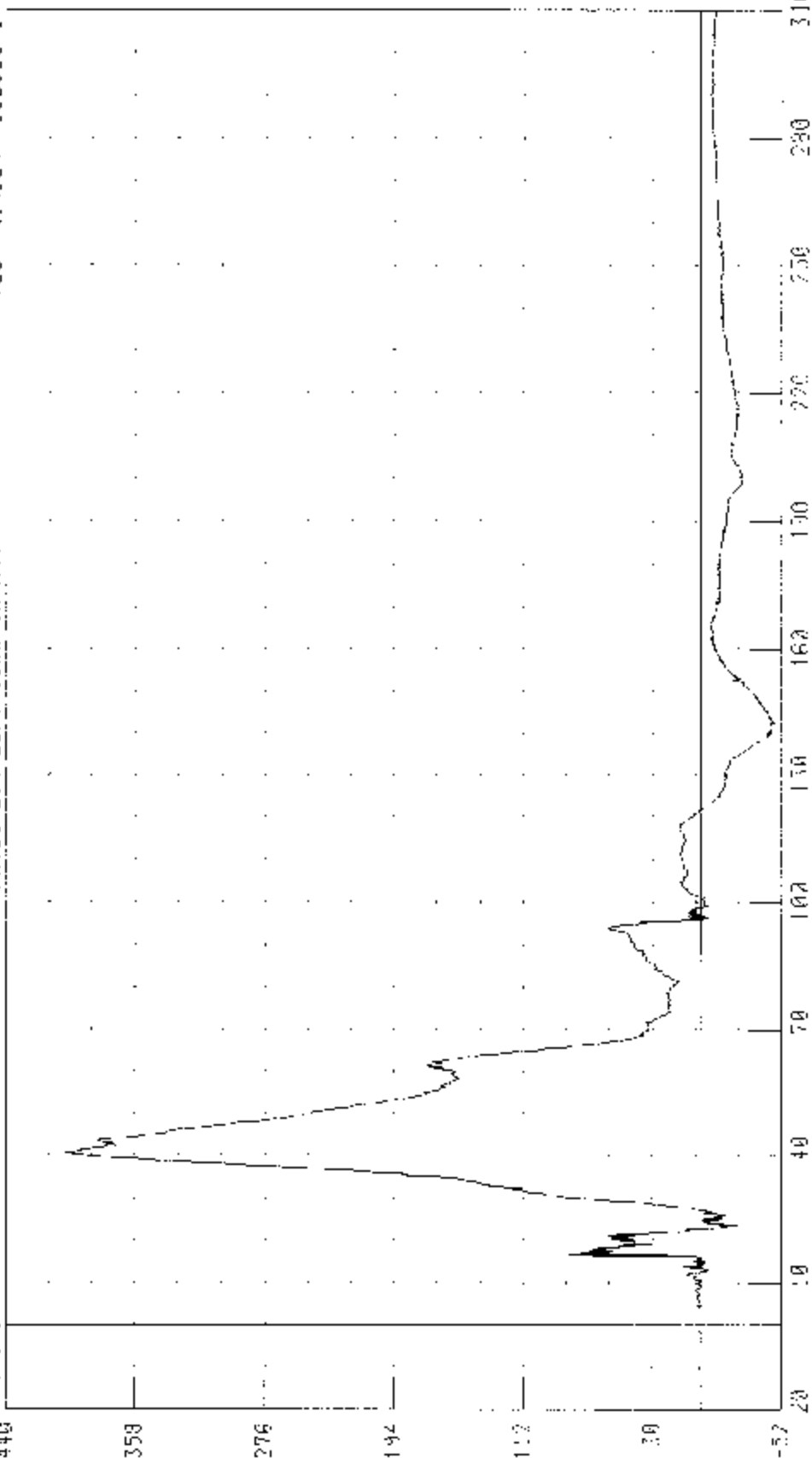
55/78 K24 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C210

LEFT REAR PASSENGER HEAD X-AXIS REDUNDANT ACCELERATION

TEST NUMBER: 030505-1

PHASE 211 LEFT SIDE IMPACT

TRC INC



TIME MS

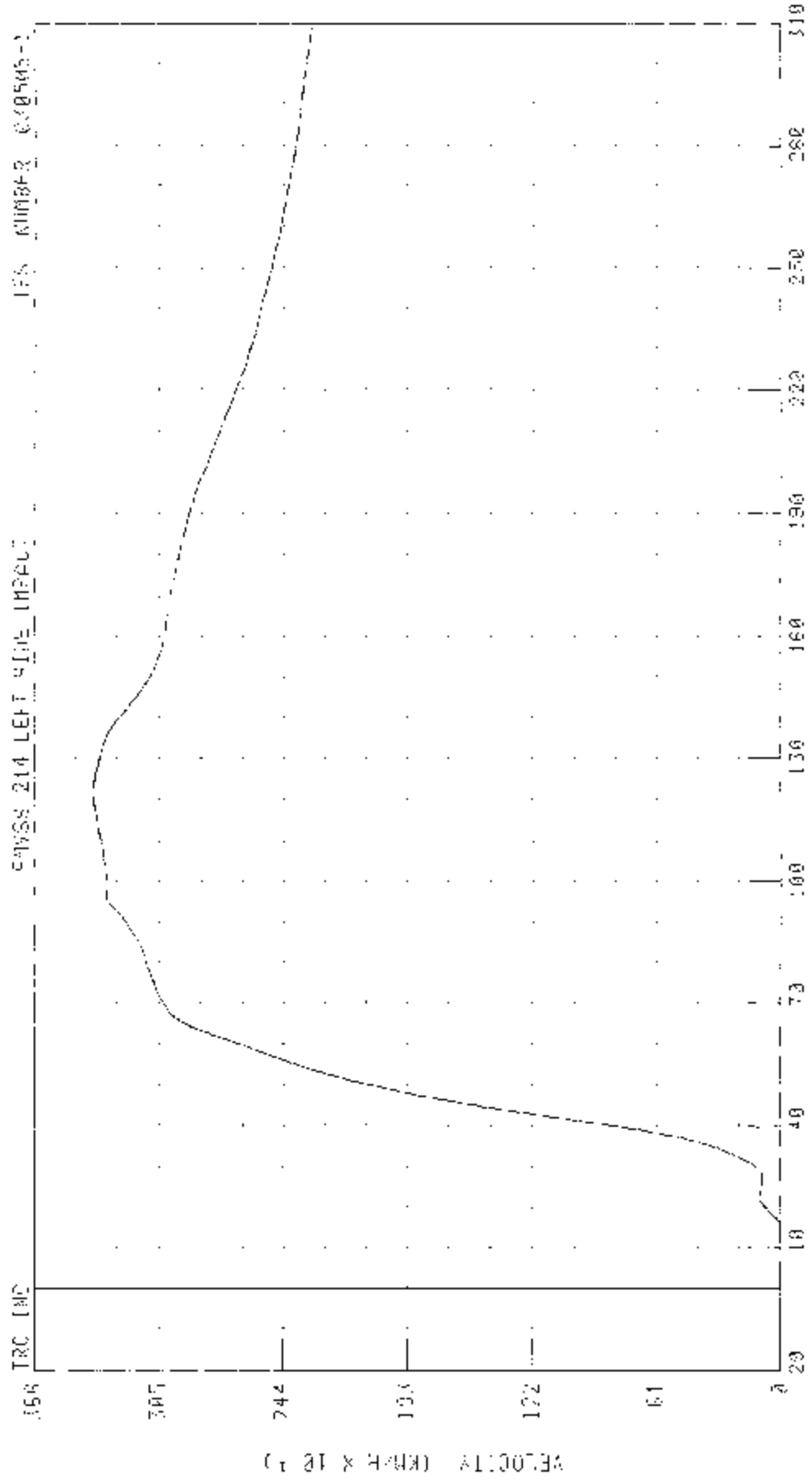
CHANNEL HEAD94 FILTER ON CLASS 1000

PEAK DATA 40 100 150 200 250 300 310

ACCELERATION (G X 10⁻¹)

55/23 P24 90 DEGREE STOP IMPACT (MOVING DEFORMABLE CARRIER) INTO LEFT SIDE OF 2003 MERCEDES BEVZ 1240

LEFT REAR PRESSURE (EQU X AXIS ROUNDED) VELOCITY

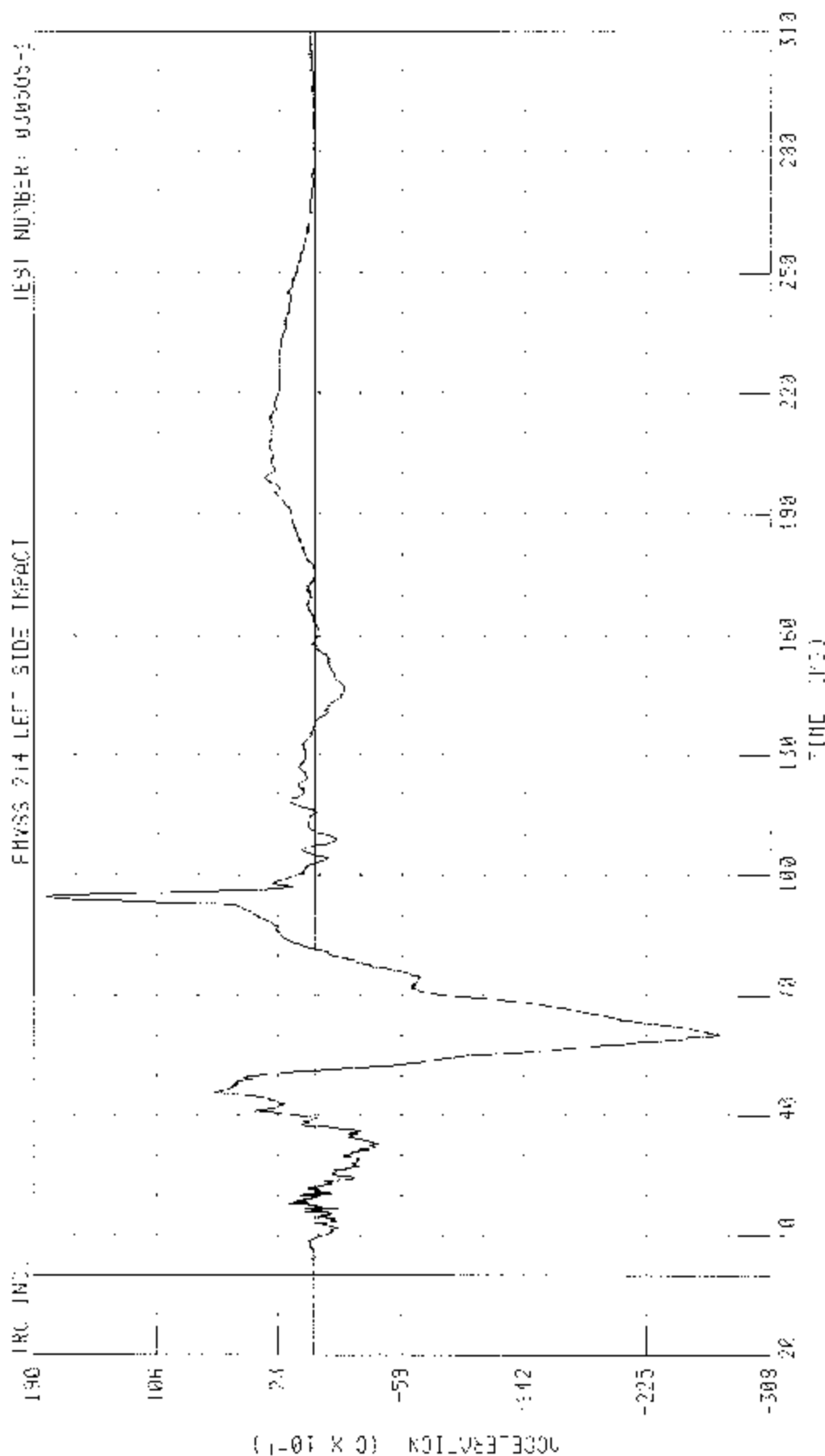


CHANNEL PERIOD: 0.00125 CH: 0.00125 120

STOK DATA: 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99 102 105 108 111 114 117 120 123 126 129 132 135 138 141 144 147 150 153 156 159 162 165 168 171 174 177 180 183 186 189 192 195 198 201 204 207 210 213 216 219 222 225 228 231 234 237 240 243 246 249 252 255 258 261 264 267 270 273 276 279 282 285 288 291 294 297 300 303 306 309 312 315 318 321 324 327 330 333 336 339 342 345 348 351 354 357 360 363 366 369 372 375 378 381 384 387 390 393 396 399 402 405 408 411 414 417 420 423 426 429 432 435 438 441 444 447 450 453 456 459 462 465 468 471 474 477 480 483 486 489 492 495 498 501 504 507 510 513 516 519 522 525 528 531 534 537 540 543 546 549 552 555 558 561 564 567 570 573 576 579 582 585 588 591 594 597 600 603 606 609 612 615 618 621 624 627 630 633 636 639 642 645 648 651 654 657 660 663 666 669 672 675 678 681 684 687 690 693 696 699 702 705 708 711 714 717 720 723 726 729 732 735 738 741 744 747 750 753 756 759 762 765 768 771 774 777 780 783 786 789 792 795 798 801 804 807 810 813 816 819 822 825 828 831 834 837 840 843 846 849 852 855 858 861 864 867 870 873 876 879 882 885 888 891 894 897 900 903 906 909 912 915 918 921 924 927 930 933 936 939 942 945 948 951 954 957 960 963 966 969 972 975 978 981 984 987 990 993 996 999 1002 1005 1008 1011 1014 1017 1020 1023 1026 1029 1032 1035 1038 1041 1044 1047 1050 1053 1056 1059 1062 1065 1068 1071 1074 1077 1080 1083 1086 1089 1092 1095 1098 1101 1104 1107 1110 1113 1116 1119 1122 1125 1128 1131 1134 1137 1140 1143 1146 1149 1152 1155 1158 1161 1164 1167 1170 1173 1176 1179 1182 1185 1188 1191 1194 1197 1200 1203 1206 1209 1212 1215 1218 1221 1224 1227 1230 1233 1236 1239 1242 1245 1248 1251 1254 1257 1260 1263 1266 1269 1272 1275 1278 1281 1284 1287 1290 1293 1296 1299 1302 1305 1308 1311 1314 1317 1320 1323 1326 1329 1332 1335 1338 1341 1344 1347 1350 1353 1356 1359 1362 1365 1368 1371 1374 1377 1380 1383 1386 1389 1392 1395 1398 1401 1404 1407 1410 1413 1416 1419 1422 1425 1428 1431 1434 1437 1440 1443 1446 1449 1452 1455 1458 1461 1464 1467 1470 1473 1476 1479 1482 1485 1488 1491 1494 1497 1500 1503 1506 1509 1512 1515 1518 1521 1524 1527 1530 1533 1536 1539 1542 1545 1548 1551 1554 1557 1560 1563 1566 1569 1572 1575 1578 1581 1584 1587 1590 1593 1596 1599 1602 1605 1608 1611 1614 1617 1620 1623 1626 1629 1632 1635 1638 1641 1644 1647 1650 1653 1656 1659 1662 1665 1668 1671 1674 1677 1680 1683 1686 1689 1692 1695 1698 1701 1704 1707 1710 1713 1716 1719 1722 1725 1728 1731 1734 1737 1740 1743 1746 1749 1752 1755 1758 1761 1764 1767 1770 1773 1776 1779 1782 1785 1788 1791 1794 1797 1800 1803 1806 1809 1812 1815 1818 1821 1824 1827 1830 1833 1836 1839 1842 1845 1848 1851 1854 1857 1860 1863 1866 1869 1872 1875 1878 1881 1884 1887 1890 1893 1896 1899 1902 1905 1908 1911 1914 1917 1920 1923 1926 1929 1932 1935 1938 1941 1944 1947 1950 1953 1956 1959 1962 1965 1968 1971 1974 1977 1980 1983 1986 1989 1992 1995 1998 2001 2004 2007 2010 2013 2016 2019 2022 2025 2028 2031 2034 2037 2040 2043 2046 2049 2052 2055 2058 2061 2064 2067 2070 2073 2076 2079 2082 2085 2088 2091 2094 2097 2100 2103 2106 2109 2112 2115 2118 2121 2124 2127 2130 2133 2136 2139 2142 2145 2148 2151 2154 2157 2160 2163 2166 2169 2172 2175 2178 2181 2184 2187 2190 2193 2196 2199 2202 2205 2208 2211 2214 2217 2220 2223 2226 2229 2232 2235 2238 2241 2244 2247 2250 2253 2256 2259 2262 2265 2268 2271 2274 2277 2280 2283 2286 2289 2292 2295 2298 2301 2304 2307 2310 2313 2316 2319 2322 2325 2328 2331 2334 2337 2340 2343 2346 2349 2352 2355 2358 2361 2364 2367 2370 2373 2376 2379 2382 2385 2388 2391 2394 2397 2400 2403 2406 2409 2412 2415 2418 2421 2424 2427 2430 2433 2436 2439 2442 2445 2448 2451 2454 2457 2460 2463 2466 2469 2472 2475 2478 2481 2484 2487 2490 2493 2496 2499 2502 2505 2508 2511 2514 2517 2520 2523 2526 2529 2532 2535 2538 2541 2544 2547 2550 2553 2556 2559 2562 2565 2568 2571 2574 2577 2580 2583 2586 2589 2592 2595 2598 2601 2604 2607 2610 2613 2616 2619 2622 2625 2628 2631 2634 2637 2640 2643 2646 2649 2652 2655 2658 2661 2664 2667 2670 2673 2676 2679 2682 2685 2688 2691 2694 2697 2700 2703 2706 2709 2712 2715 2718 2721 2724 2727 2730 2733 2736 2739 2742 2745 2748 2751 2754 2757 2760 2763 2766 2769 2772 2775 2778 2781 2784 2787 2790 2793 2796 2799 2802 2805 2808 2811 2814 2817 2820 2823 2826 2829 2832 2835 2838 2841 2844 2847 2850 2853 2856 2859 2862 2865 2868 2871 2874 2877 2880 2883 2886 2889 2892 2895 2898 2901 2904 2907 2910 2913 2916 2919 2922 2925 2928 2931 2934 2937 2940 2943 2946 2949 2952 2955 2958 2961 2964 2967 2970 2973 2976 2979 2982 2985 2988 2991 2994 2997 3000 3003 3006 3009 3012 3015 3018 3021 3024 3027 3030 3033 3036 3039 3042 3045 3048 3051 3054 3057 3060 3063 3066 3069 3072 3075 3078 3081 3084 3087 3090 3093 3096 3099 3102 3105 3108 3111 3114 3117 3120 3123 3126 3129 3132 3135 3138 3141 3144 3147 3150 3153 3156 3159 3162 3165 3168 3171 3174 3177 3180 3183 3186 3189 3192 3195 3198 3201 3204 3207 3210 3213 3216 3219 3222 3225 3228 3231 3234 3237 3240 3243 3246 3249 3252 3255 3258 3261 3264 3267 3270 3273 3276 3279 3282 3285 3288 3291 3294 3297 3300 3303 3306 3309 3312 3315 3318 3321 3324 3327 3330 3333 3336 3339 3342 3345 3348 3351 3354 3357 3360 3363 3366 3369 3372 3375 3378 3381 3384 3387 3390 3393 3396 3399 3402 3405 3408 3411 3414 3417 3420 3423 3426 3429 3432 3435 3438 3441 3444 3447 3450 3453 3456 3459 3462 3465 3468 3471 3474 3477 3480 3483 3486 3489 3492 3495 3498 3501 3504 3507 3510 3513 3516 3519 3522 3525 3528 3531 3534 3537 3540 3543 3546 3549 3552 3555 3558 3561 3564 3567 3570 3573 3576 3579 3582 3585 3588 3591 3594 3597 3600 3603 3606 3609 3612 3615 3618 3621 3624 3627 3630 3633 3636 3639 3642 3645 3648 3651 3654 3657 3660 3663 3666 3669 3672 3675 3678 3681 3684 3687 3690 3693 3696 3699 3702 3705 3708 3711 3714 3717 3720 3723 3726 3729 3732 3735 3738 3741 3744 3747 3750 3753 3756 3759 3762 3765 3768 3771 3774 3777 3780 3783 3786 3789 3792 3795 3798 3801 3804 3807 3810 3813 3816 3819 3822 3825 3828 3831 3834 3837 3840 3843 3846 3849 3852 3855 3858 3861 3864 3867 3870 3873 3876 3879 3882 3885 3888 3891 3894 3897 3900 3903 3906 3909 3912 3915 3918 3921 3924 3927 3930 3933 3936 3939 3942 3945 3948 3951 3954 3957 3960 3963 3966 3969 3972 3975 3978 3981 3984 3987 3990 3993 3996 4000

37228 KPH 90 DEGREE SIDE IMPACT (MOVING OFFSHOULDER CARRIER) INTO FET SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER HEAD Z-AXIS REDUNDANT ACCELERATION



CHANNEL: 4112R4 FILTER: CH CLASS: 1000

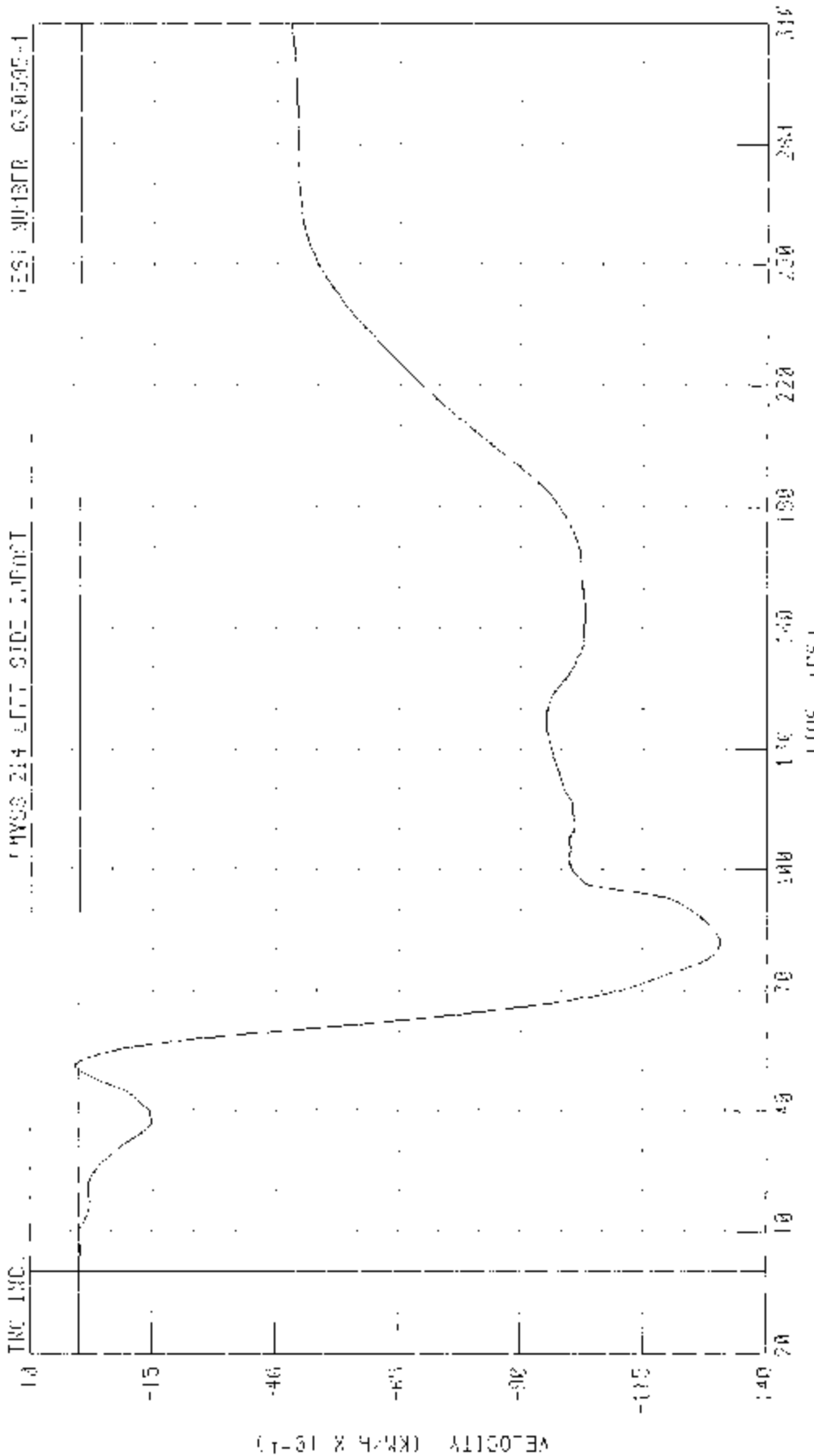
PEAK DATA: 18 10 0 96 64 115 -77 47 1 0 100 40 115

55/23 KPH 30 DEGREE SLUG IMPACT MOVING DEFORMABLE BARRIER INTO LEFT SIDE OF AREA HERVEDES-0002 1240

LEFT REAR PASSENGER HEAD Z-AXIS RADOMMANT VELOCITY

TEST NUMBER 030505-1

MYSS 214 LEFT SIDE IMPACT



TIME (MS)

CHANNEL VE02VJ FILTER: CH 0 FREQ: 100

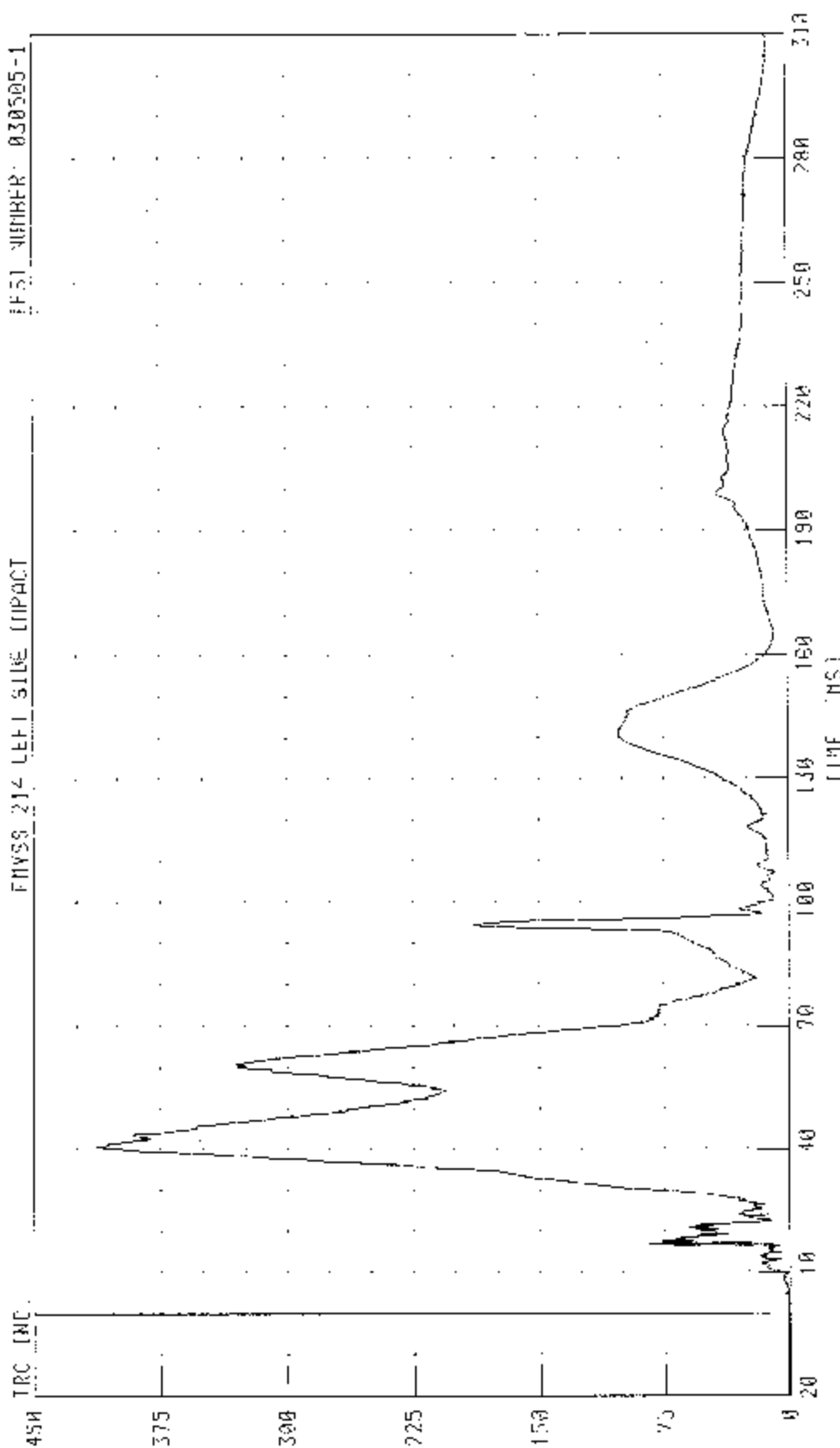
030505-1

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER HEAD RESULTANT REOUNDANT ACCELERATION

TEST NUMBER: 030505-1

FINES 214 LEFT SIDE IMPACT



(1-01 X 0) NO11-8373000

CHANNEL: HEAD2 FILTER: ON CLASS: 1000

PEAK DATA: 41 30 0 0 40 00 MS, 0 01 0 0 -10 34 MS

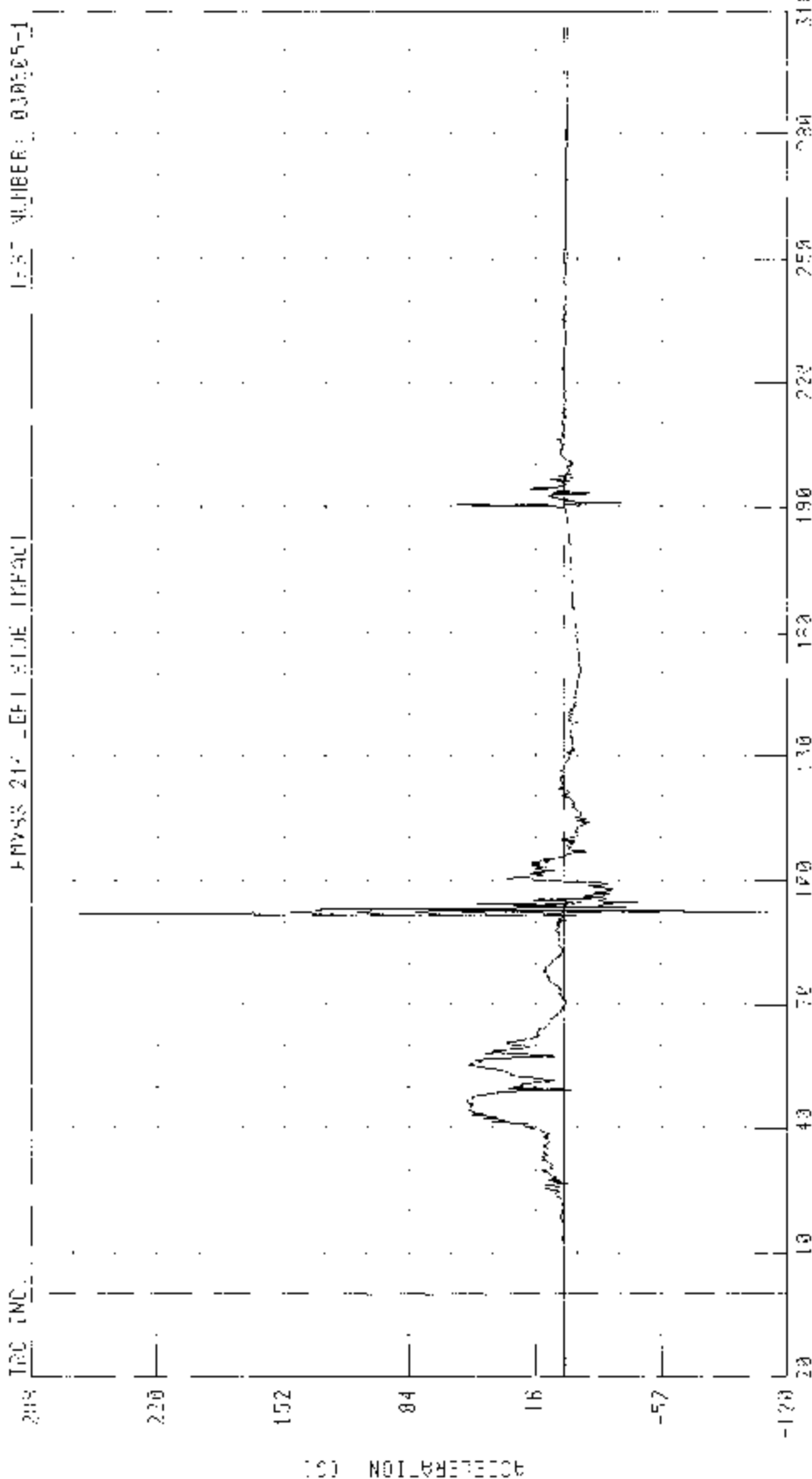
55 MPH 50 DEGREE SIDE IMPACT (MOVING CLIFORMABLE BARREL) INTO LEFT SIDE OF 2003 MERCEDULES-PLN7 12HP

LEFT REAR PASSENGER UPPER RIO X-RAY RECORDANT ACCELERATION

TEST NUMBER: 030505-1

FMVSS 214 LEFT SIDE IMPACT

120 INCH



CHANNEL L02124 FILTER 0.1 HZ 200

TIME (MS)

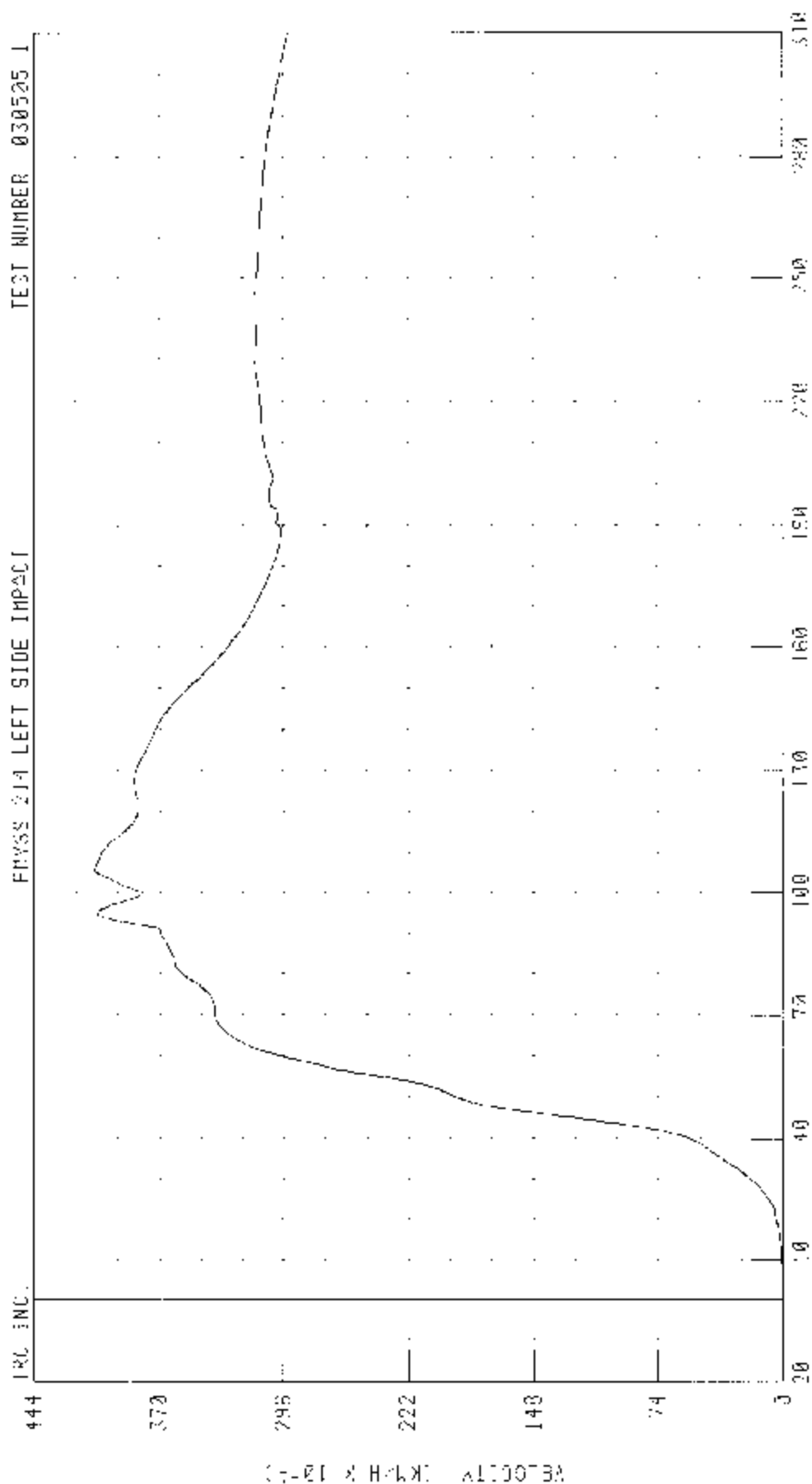
PEAK DATA 242.80 G W 12.24 MS, 120.57 G @ 18.54 MS

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER UPPER RIB Y-AXIS REBOUND/VELOCITY

TEST NUMBER 030525 1

FRYSS 214 LEFT SIDE IMPACT



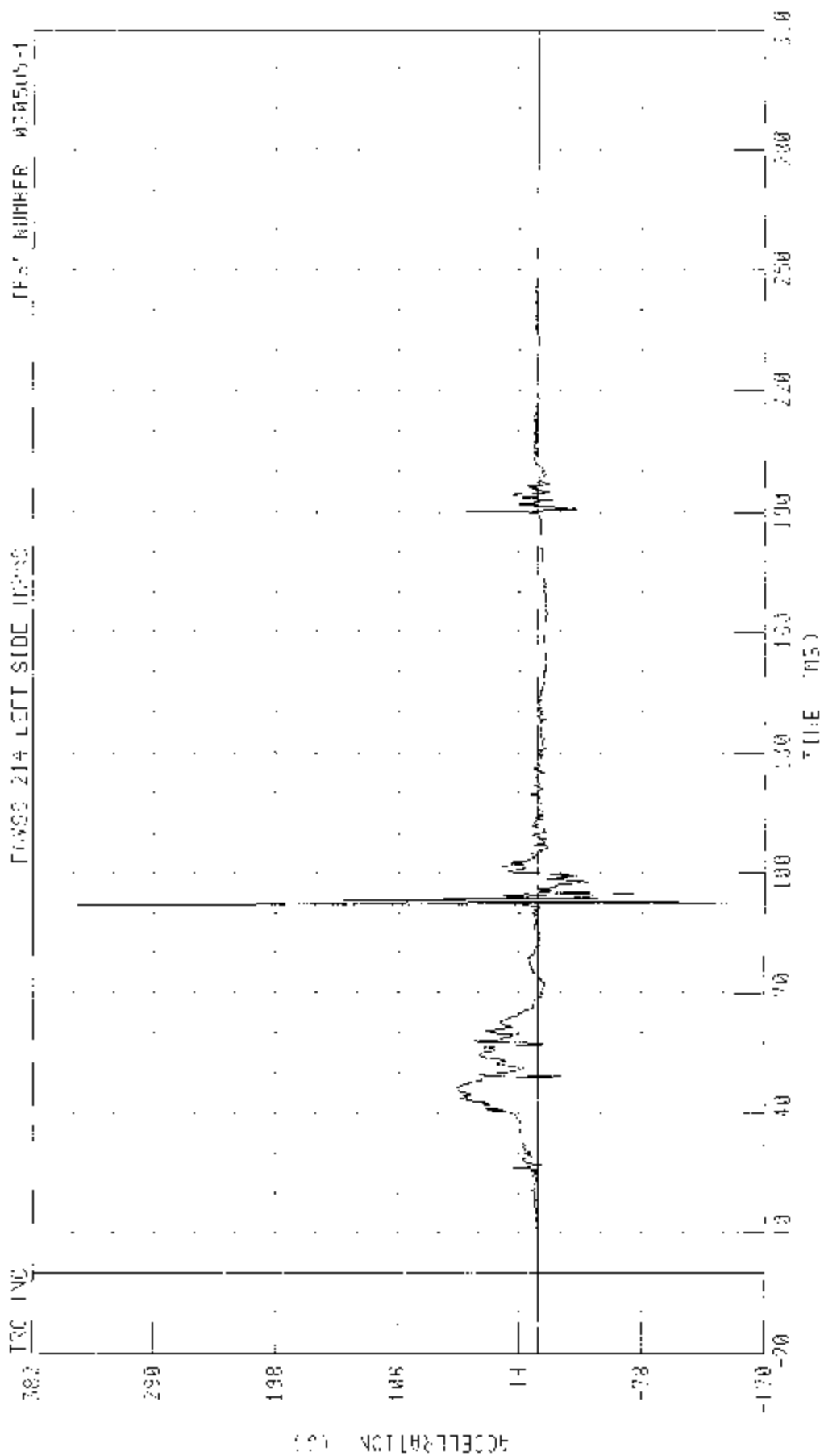
TIME (ms)

CHANNEL 1: RIB Y-AXIS FILTER: 100 HZ CLASS: 120

PEAK DATA: 12.80 KPH X 10⁻³ @ 100.00 MS, 0.00 KPH X 10⁻³ @ 0.00 MS

55/28 424 20 10-02-87 5000 MOVING DETURABLE BARRIER) INTO LEFT SIDE OF 2000 TERC-UES-BRK7 >10

LEFT REAR PASSENGER LOWFIRE AIR W-419 REFINCENT 9000 FRACTION

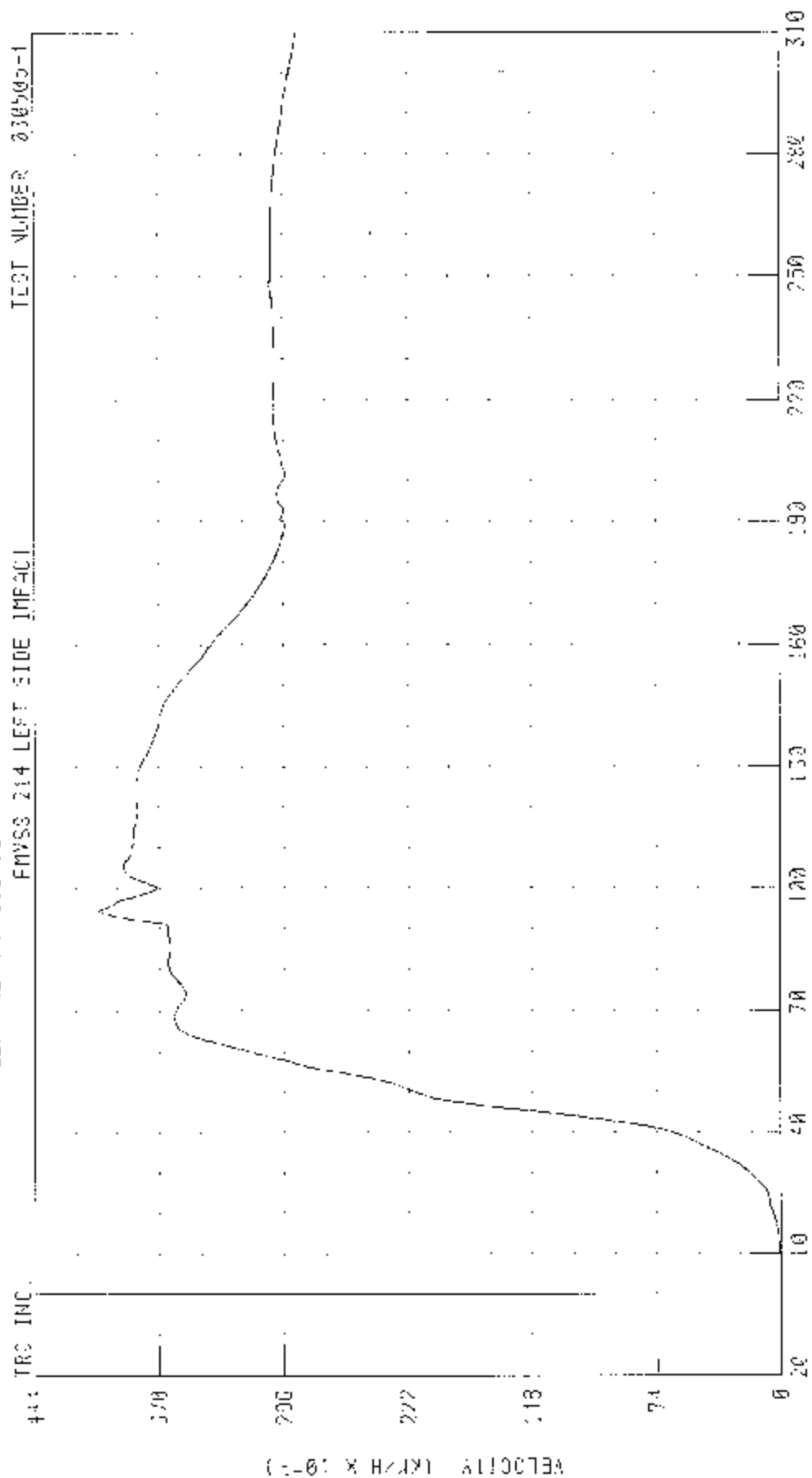


CHANNEL: LFR724 FILTER: 0H CIPAS: 1500

DATA: 347.0 0 0 22 24 00 137 73 0 0 92 75 05

55/20 KPH 00 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDS-BENZ C240

LEFT REAR PASSENGER LOWER RIB Y-AXIS REBOUND VELOCITY

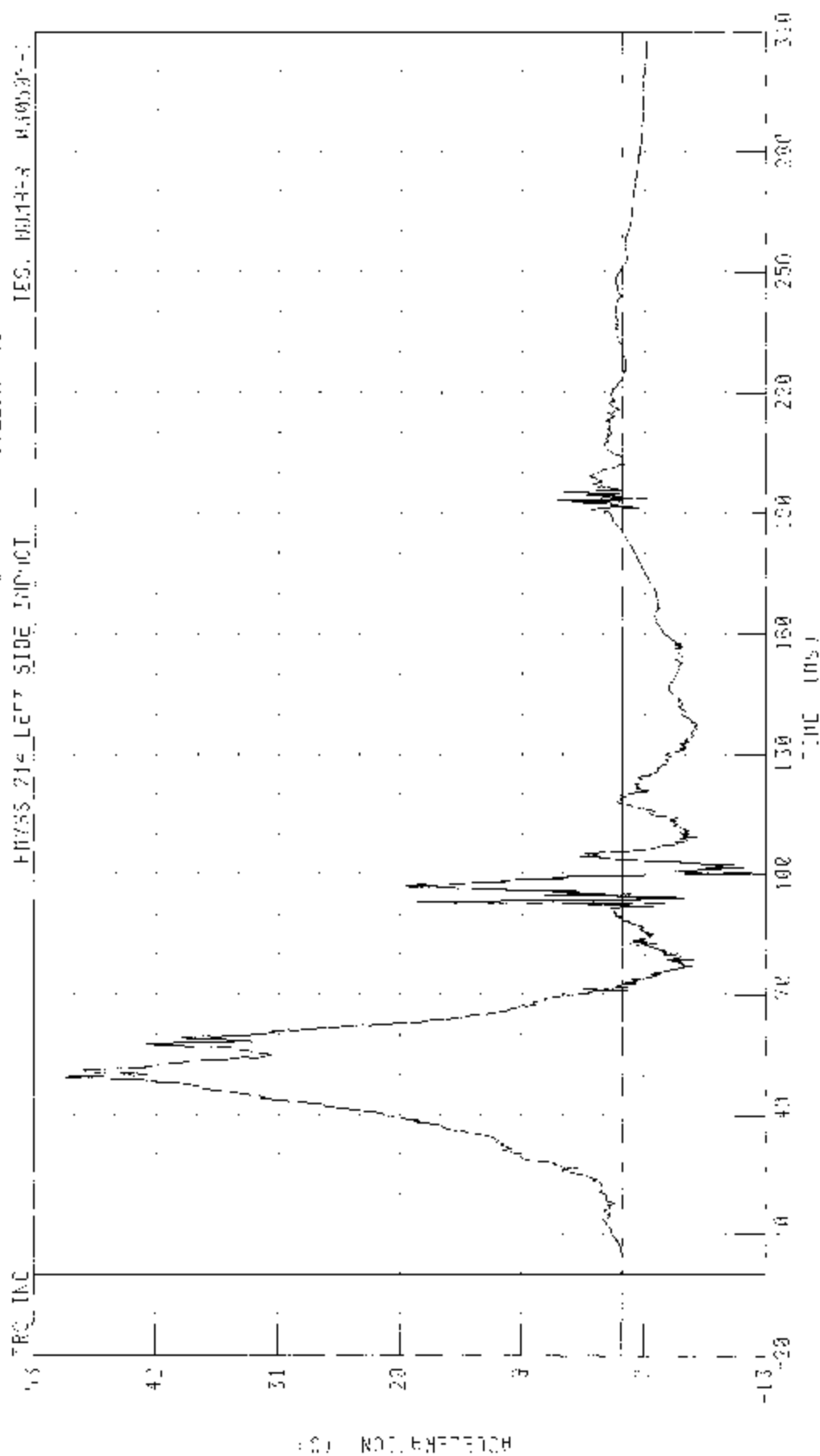


CHANNEL LLP-9J FILTER: CH CLASS: 130

FILE DATE 40 53 KPH W 54.43 MS. 0 00 KPH 0 0 00 MS

55.28 REF TO MECH 510- IMPACT MOVING DETONABLE BOMBER INTO SET SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER LOWER SPINE X AXIS REDUCANT ACCELERATION



CHANNEL 117884 FILTER CH CLASS 1200

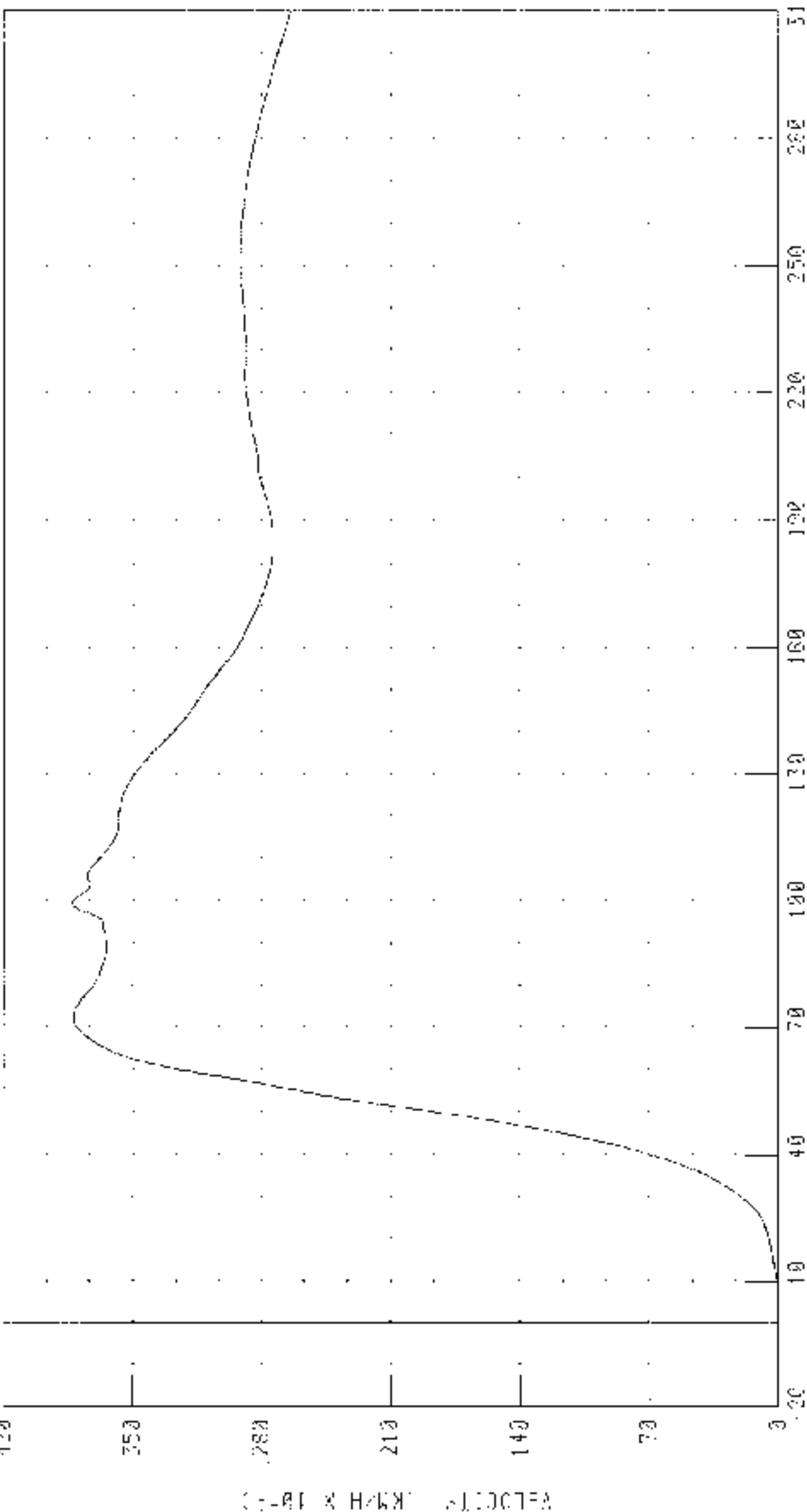
PEAK DATA 00 04 03 19 08 RS. -1 27 0 0 104 49 15

05/28 KPH 90 D-GR-- STIFF IMPACT (MOVING DEFORMABLE BARRIER) V10 FET SITE OF 2883 VERLUFUS-REF17 0240

LEFT REAR PASSENGER LOWER SPINE Y-AXIS REDUNDANT VELOCITY

TEST NUMBER: 030505-1

TRC 140



VELOCITY (KPH X 10-1)

TIME (MS)

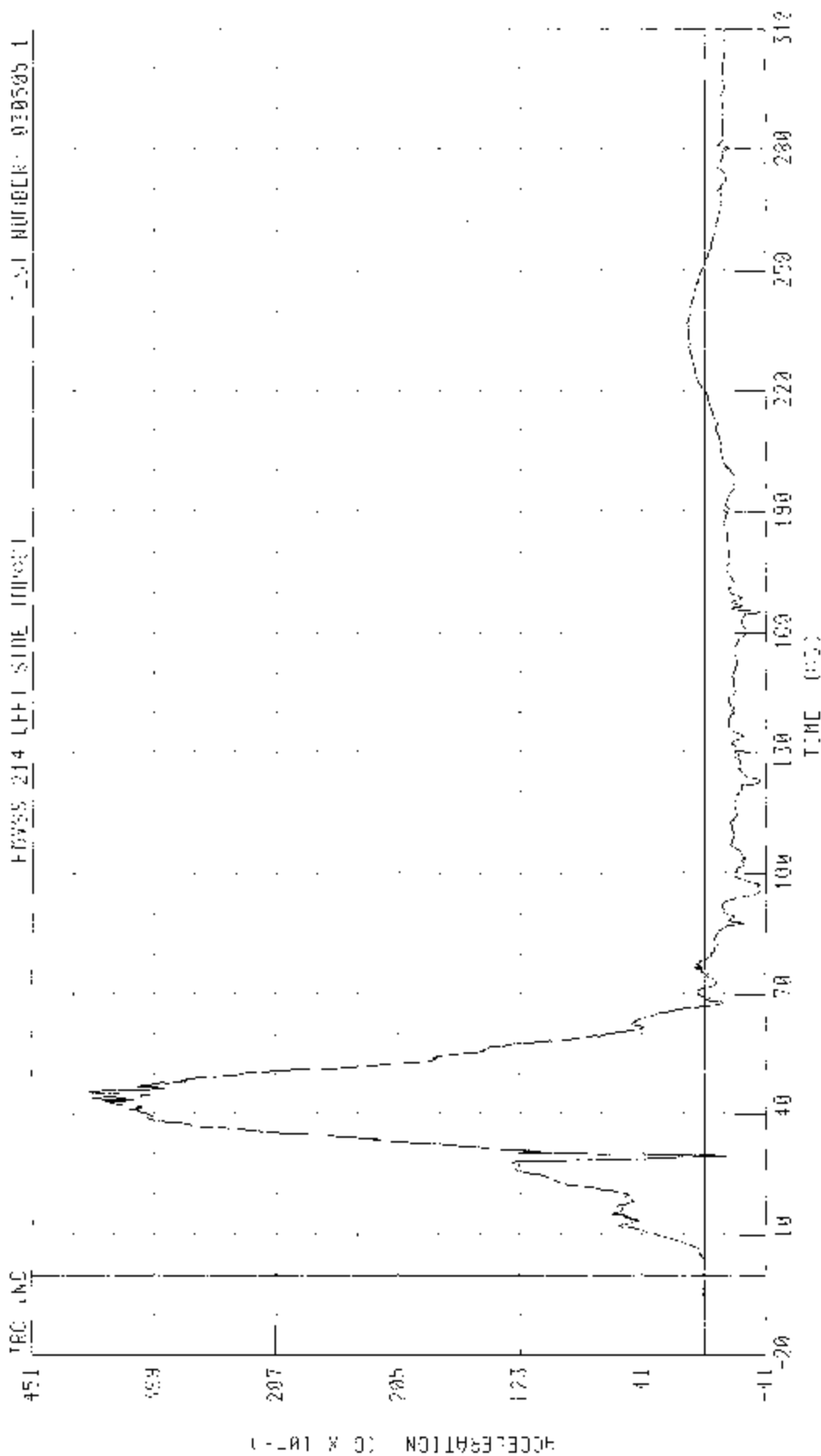
CHANNEL 112V2J FILTER OF 112V2S 180

PEAK Data: 38 77 KPH @ 94 52 MS, 4 00 KPH @ 2 00 MS

[illegible]

LEFT REFERENCE PLAYS Y-AXIS REDUCMENT ACCT..[RATIO]

1985030 - 273104 155.



CLIENT PLACE

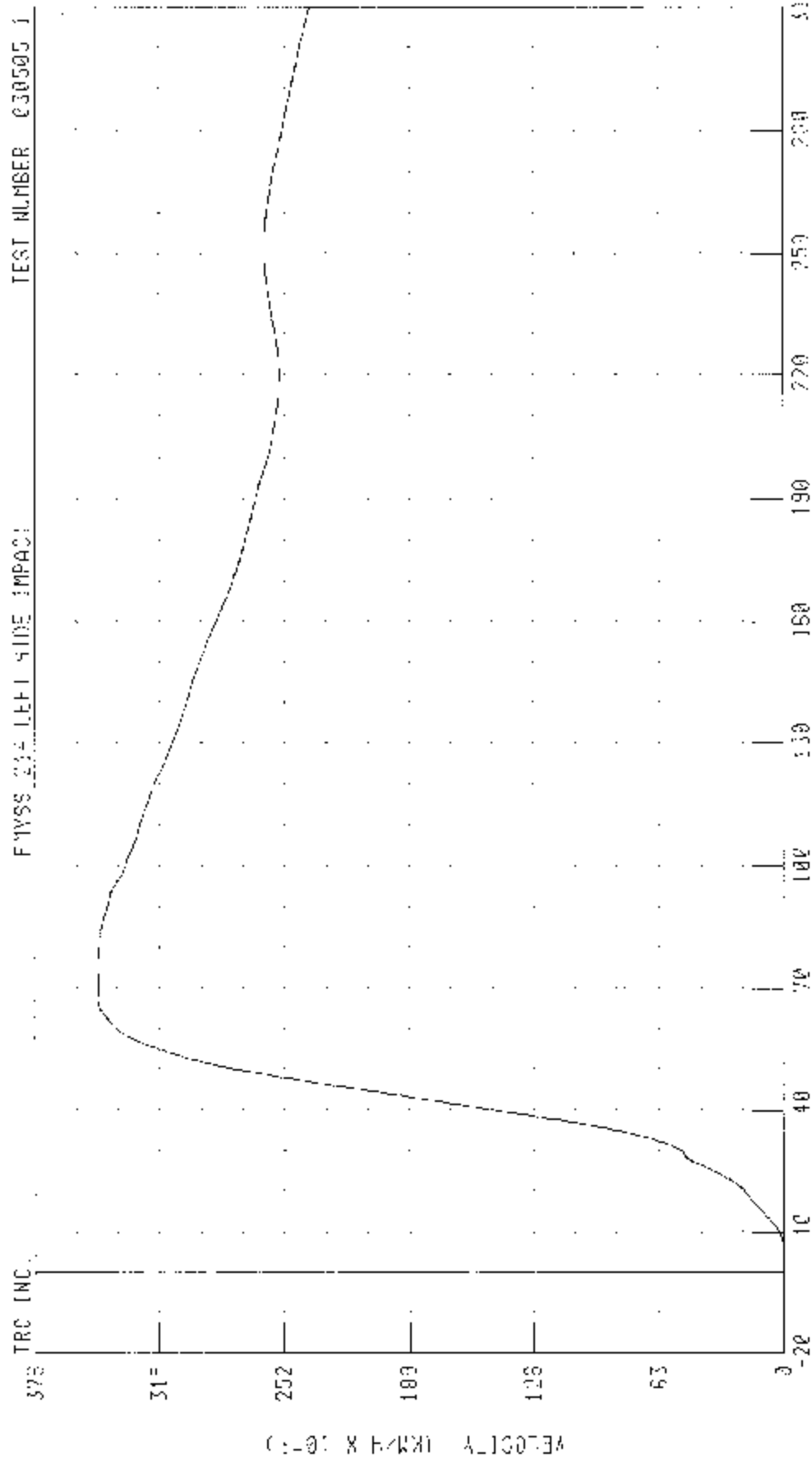
2006-07-01 09:15:10

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

LEFT REAR PASSENGER PELVIS X-Axis REDUNDANT VELOCITY

FLYSS 234 LEFT SIDE IMPACT

TEST NUMBER 030505-1



TIME (MS)

CHANNEL PELVIS FILTER: OR CLASS 120

PEAK DATA 34.11 KPH 18.07 04 PS. 0.20 4M-H 2.0 00 MS

Test Vehicle Instrumentation Plots

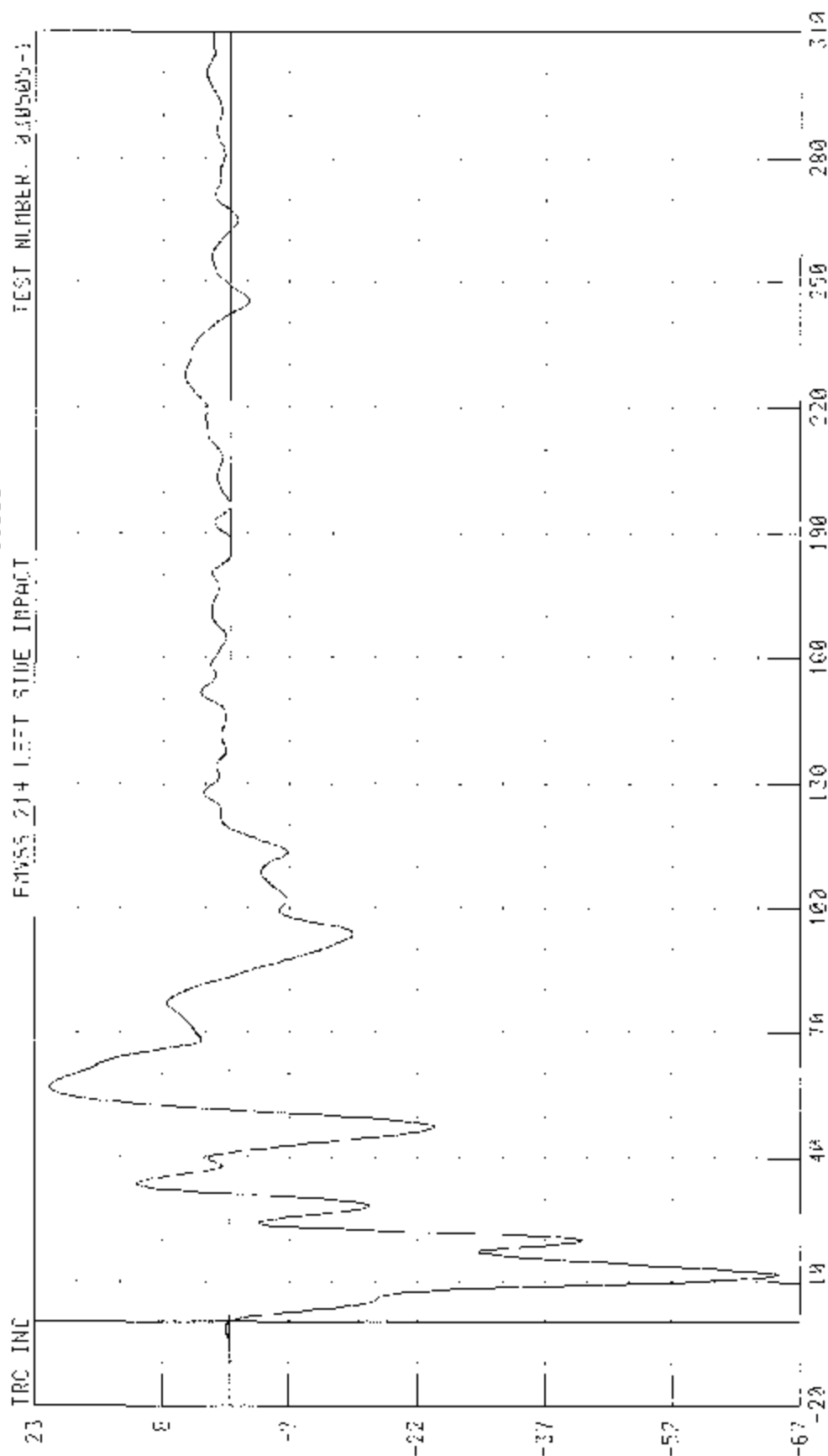
Acceleration Data - Filter Class 60

Integration Data - Filter Class 180

55/23 <PR 90 DEGREE SIDE IMPACT MOVING DEFORMABLE BARRIER: 1A10 LEFT SIDE OF 2003 MERCEDES BENZ C240

RIGHT SIDE STILL AT FRONT SEAT X-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 200505-1



TIME (MS)

CHANNEL RFSK01 FILTER CH CLASS 60

MARK 2414.217 G @ 57.12 MS, -5.46 G @ 11.68 MS

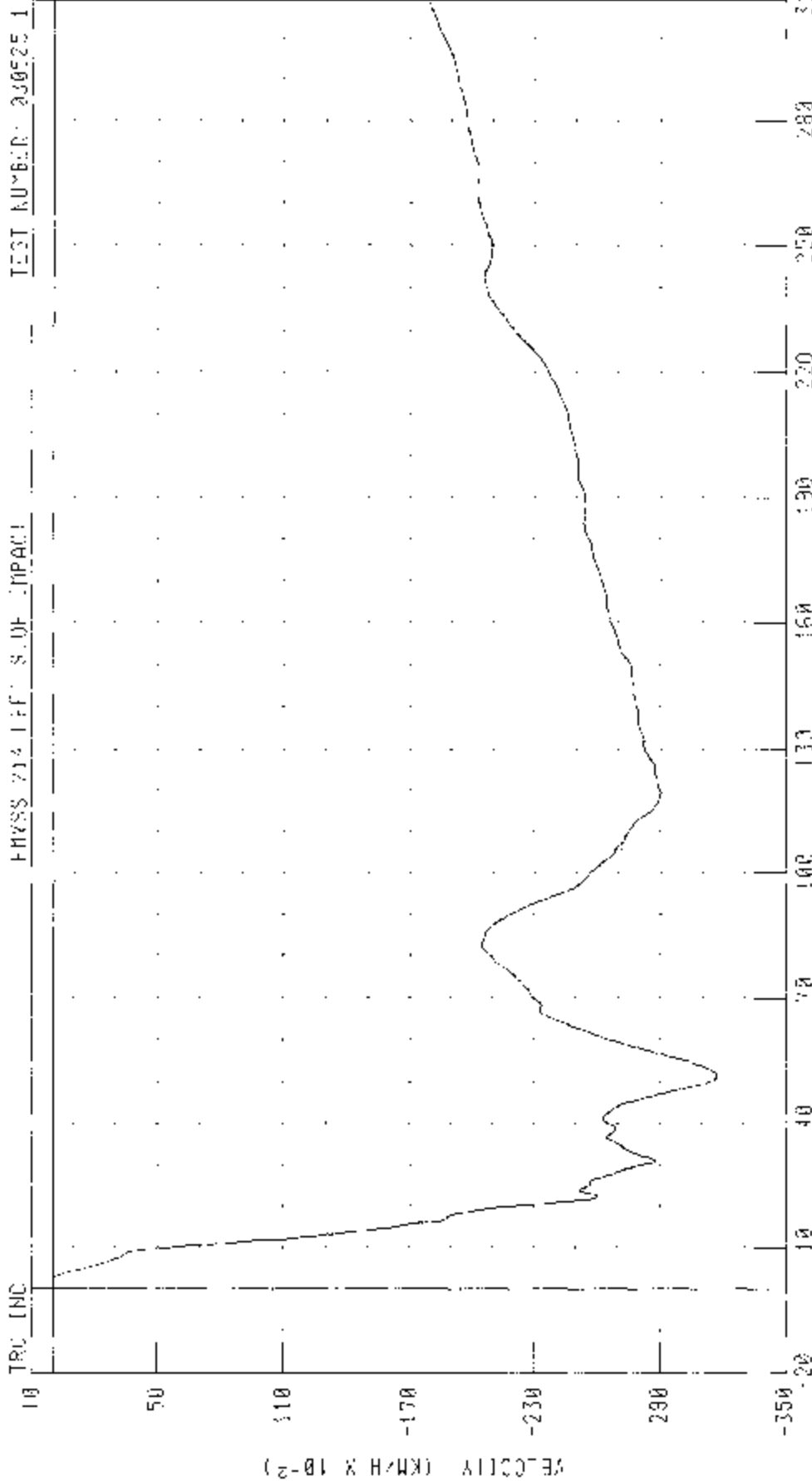
55/23 KTH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INITIAL SPEED OF 7003 MERCEDES BENZ C240

RIGHT SIDE SILL OF FRONT SEAT & AXES VELOCITY

TEST NUMBER: 230525-1

PHYS 214 LFF SIDE IMPACT

TRC INC



TIME (MS)

CHANNEL: REF: 214 LFF SIDE IMPACT

PLATE: 04 A 0 20 KTH 30 DEGREE SIDE IMPACT

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

RIGHT SIDE SILL AT FRONT SEAT 4X15 ACCELERATION

SVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030505

IRC INC.

263

221

ACCELERATION (G X 10⁻³)

173

125

77

29

-19

TIME (MS)

130

160

190

220

250

280

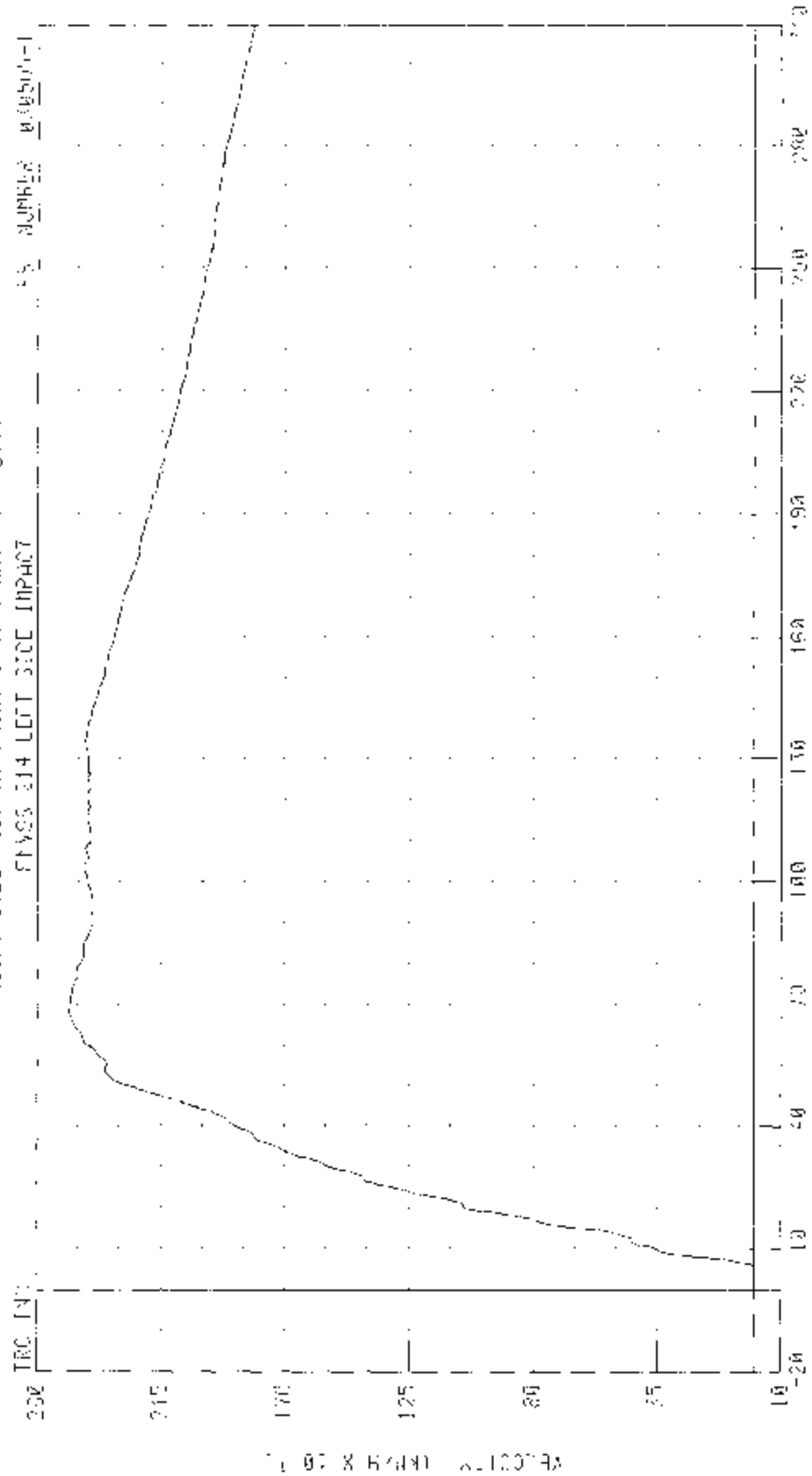
310

CHANNEL: RESYST FILTER: 24 GROSS: 60

PEAK DATA: 24.03 G @ 134 MS, 1.15 G @ 175.44 MS

55/28 MPH 90 DEGREE SIDE IMPACT INVOLVING DEFORMABLE BARRIER INTO LEFT SIDE OF 2003 MERCEDES-BENZ 1.240

RIGHT SIDE SILL AT FRONT C-PI X AXIS VELOCITY

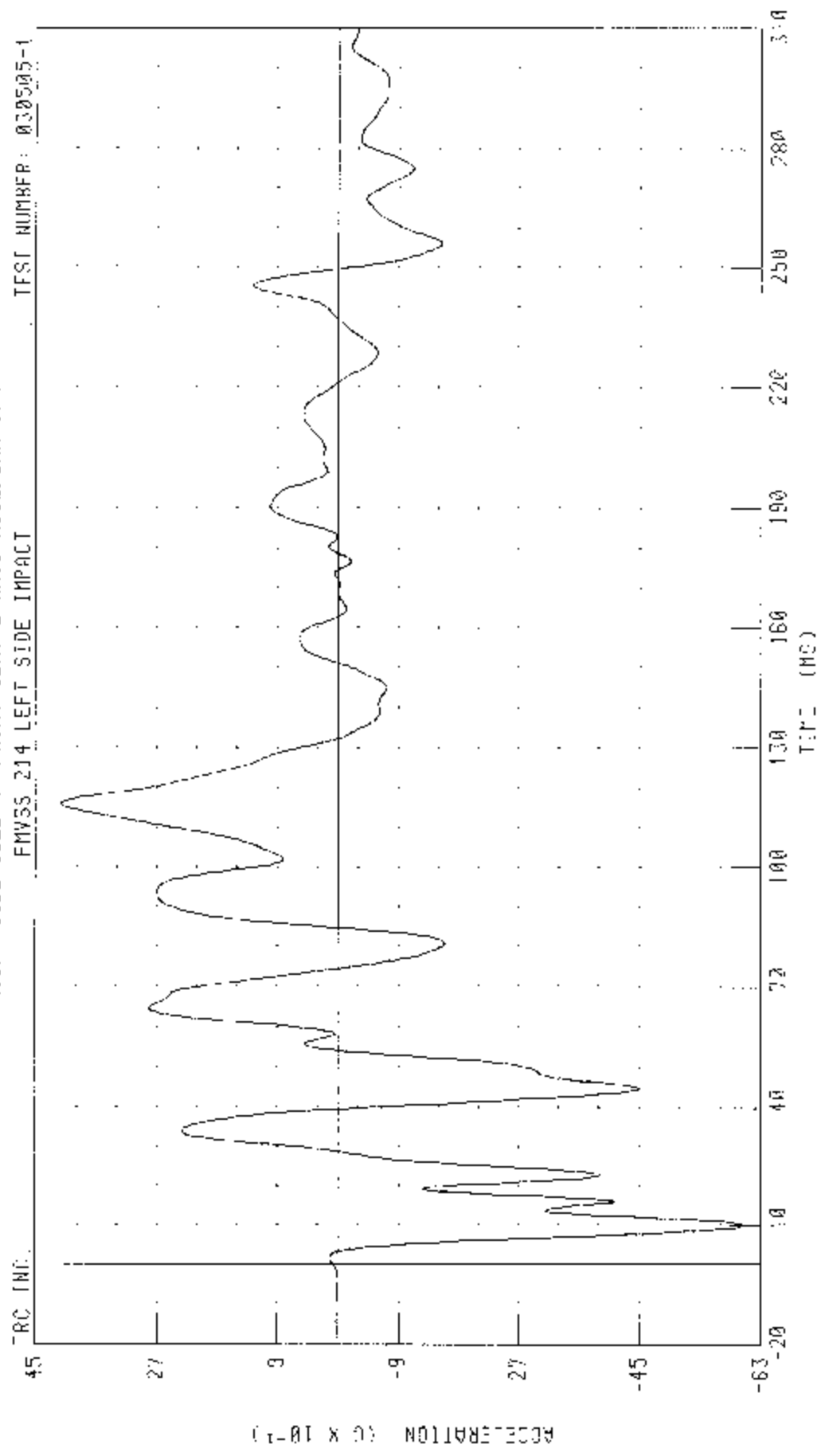


CHANNEL 8-3771 FILTER: 0P CL: 155 150

PACK DATA 24.83 MPH 90 DEGREE SIDE IMPACT 2 4 96 MS

55/38 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES BENZ C240
 RIGHT SIDE SILL AT FRONT SEAT Z-AXIS ACCELERATION

FMVSS 214 LEFT SIDE IMPACT TEST NUMBER: 030505-1

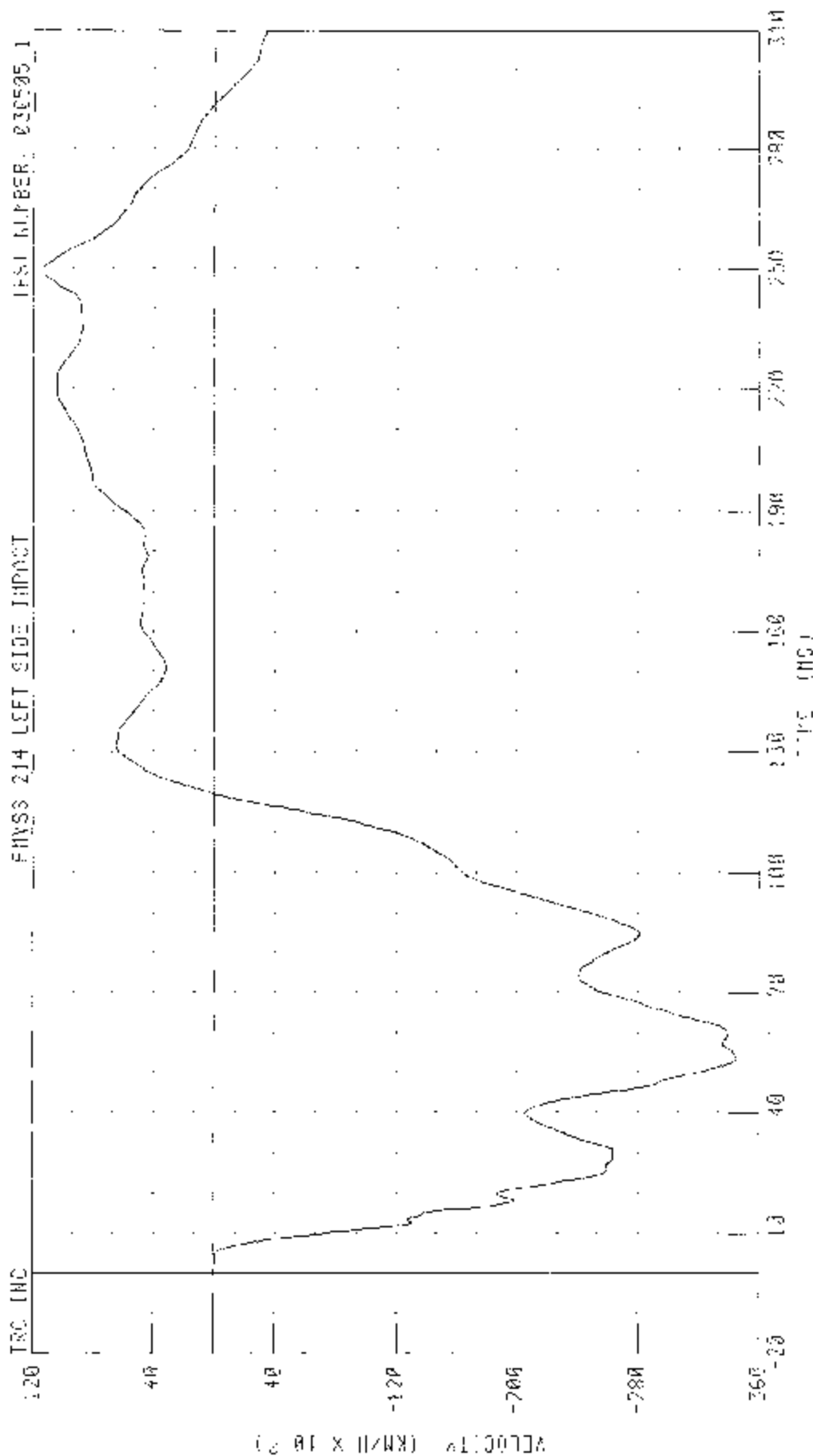


CUMMEL BFS701 FILTER CH 0.4SS 50

PEAK DATA 4 12 6 9 110 10 MS, -6 05 0 6 9 92 MS

55/28 KPH 30 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF CAR. RECORDS GENZ 02-0

RIGHT SIDE SHU AT FRONT SEA Z-AXIS VELOCITY



CHANNEL REF52V1 FILTER CH CLASS 120

PER RATE 1.13 KHZ @ 240.04 MS 0.45 KHZ @ 55.62 MS

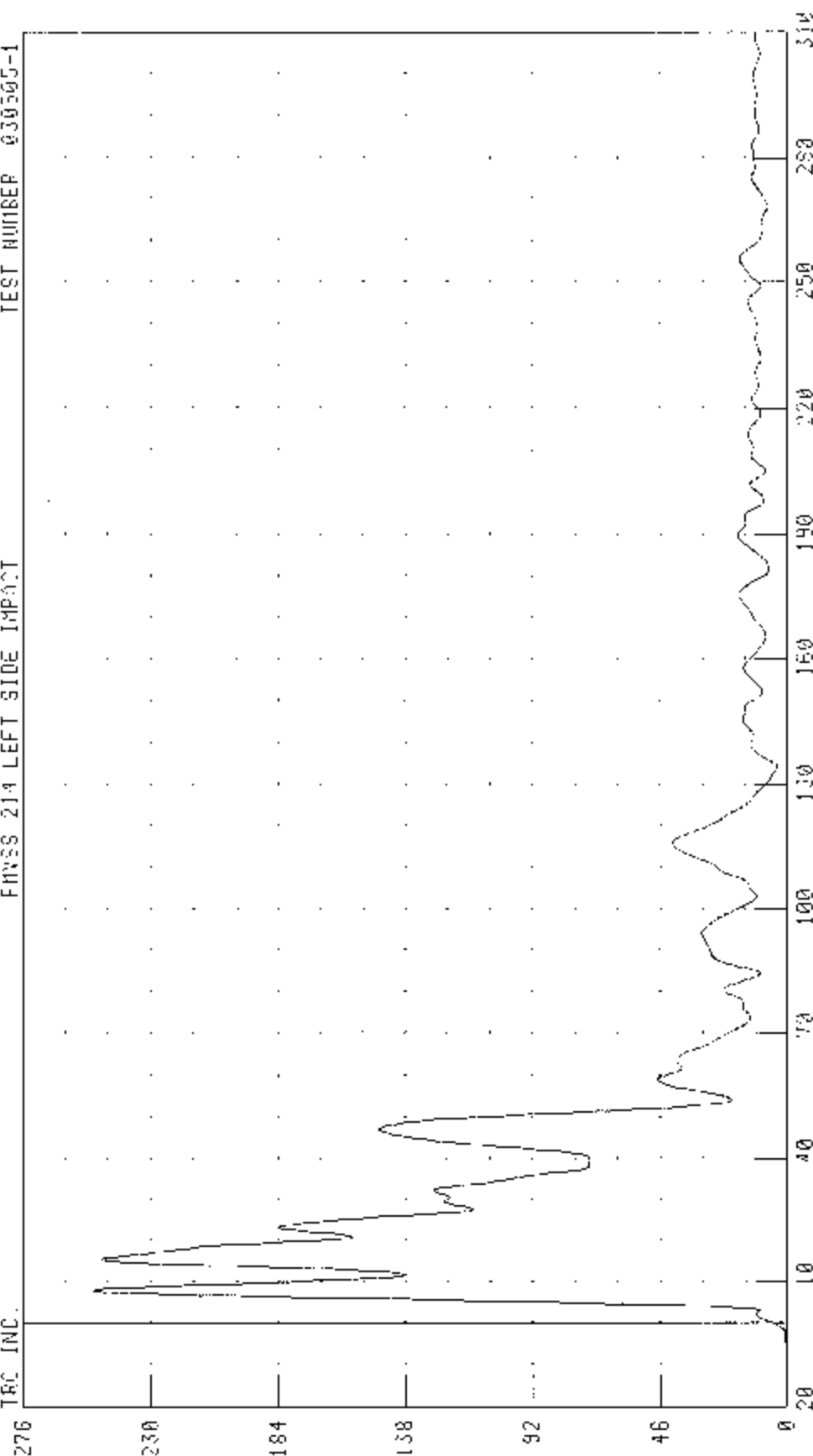
55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES BENZ C240

RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

FMVSS 214 LEFT SIDE IMPACT

TEST NUMBER 030505-1

TBC INC.



TIME (MS)

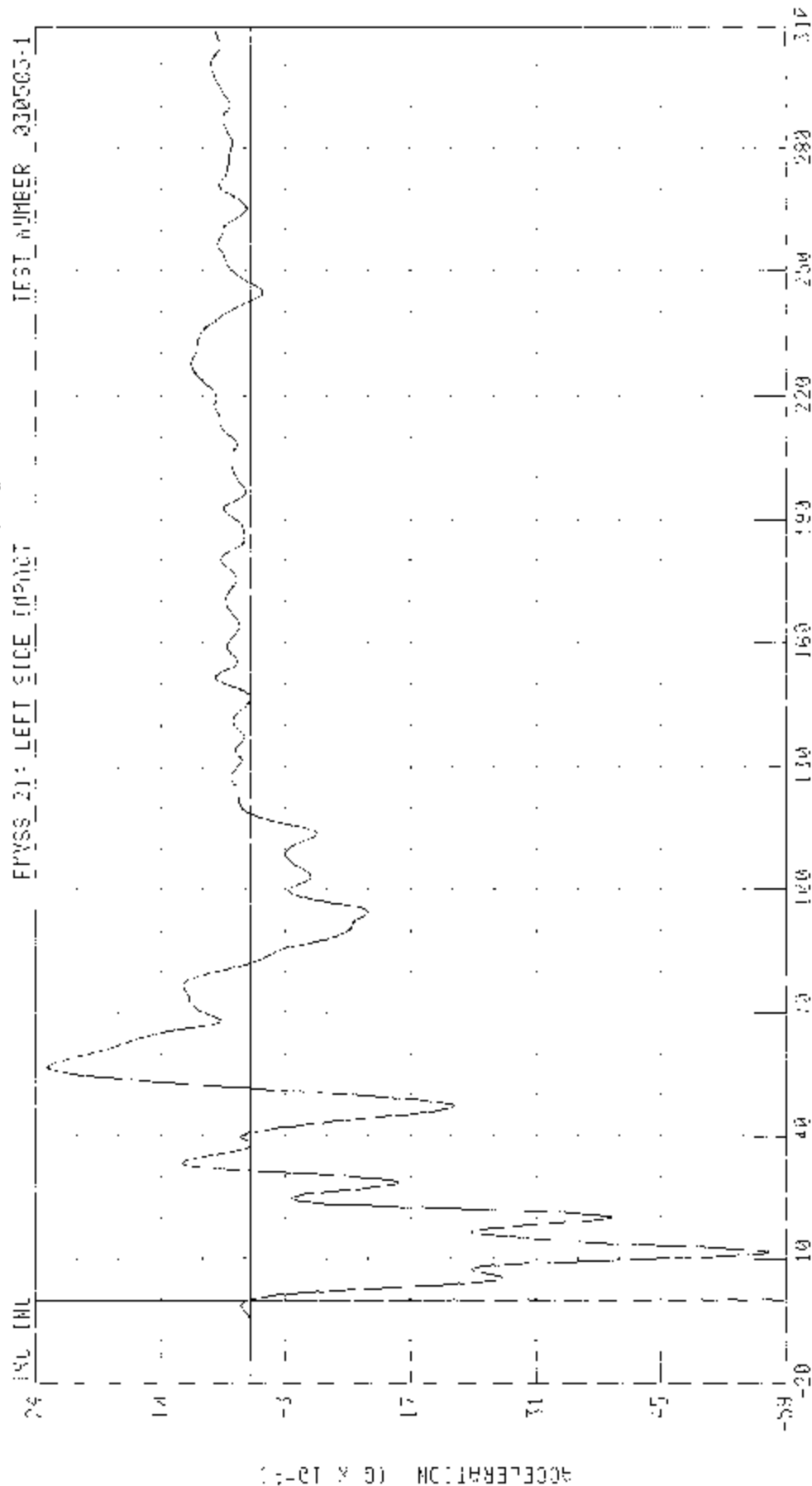
CHANNEL REF001 FILTER: CH CLASS 00

PEAK DATA: 25 10 0 0 7.92 1S; 0 02 0 0 -14 24 NS

55/73 R211 00 0400000000 IMPACT MOVING DEFENDABLE BARRIER 1000 LEFT SIDE 1000 PERCENT-S-BEHZ 0240

RIGHT SIDE SILENT AT REAR SPOT X-AXIS ACCELERATION

FRVSS 20: LEFT SIDE IMPACT IFSI NUMBER 030505-1

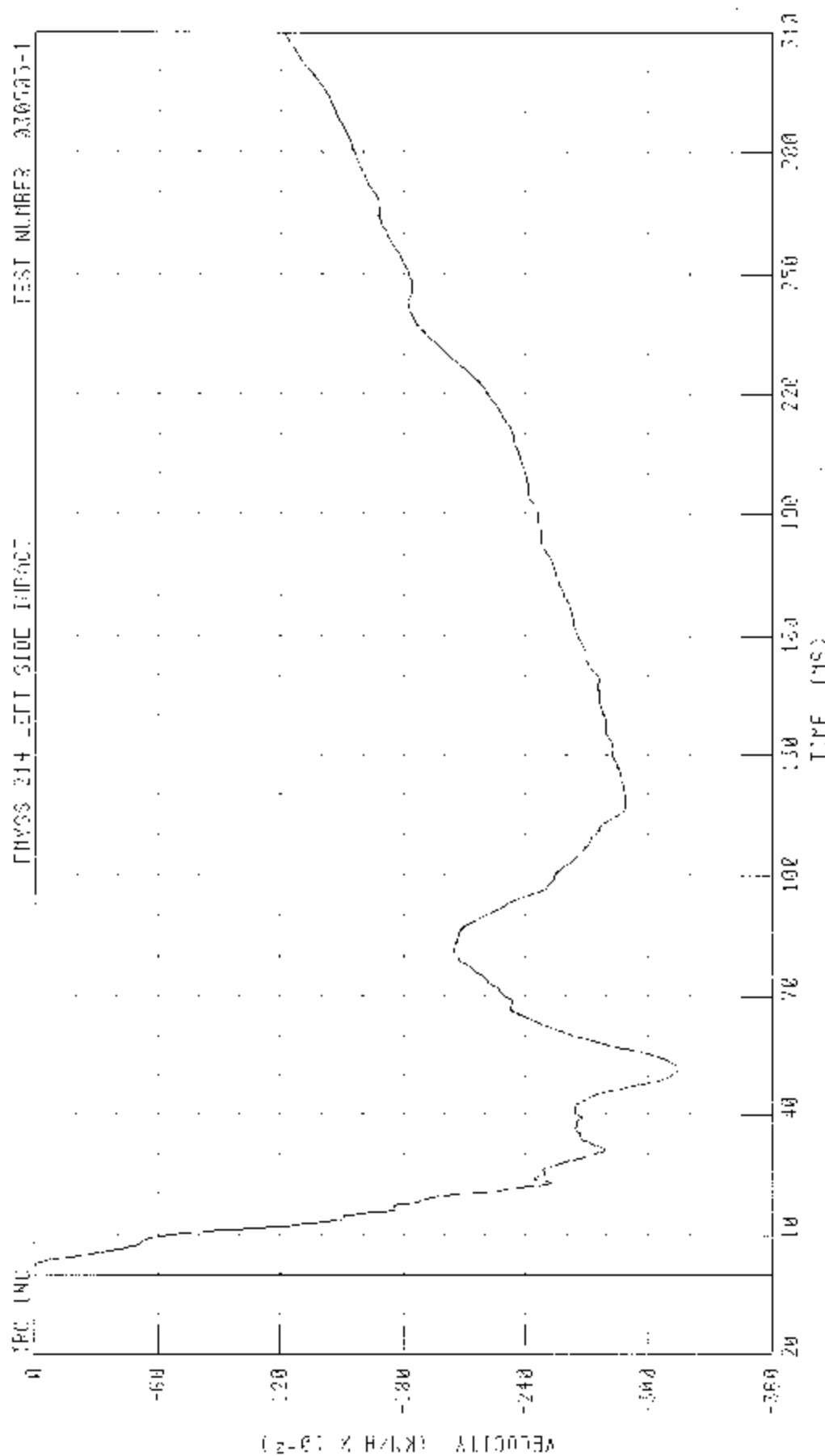


CHANNEL FRVSS01 511700 00 0400000000 PERIOD DATA 0.027 0.0 07 00 MS: -5 02 0 0 11 68 10

55/28 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

RIGHT SIDE SILL AT REAR SEAT X-AXIS VELOCITY

TEST NUMBER 030505-1

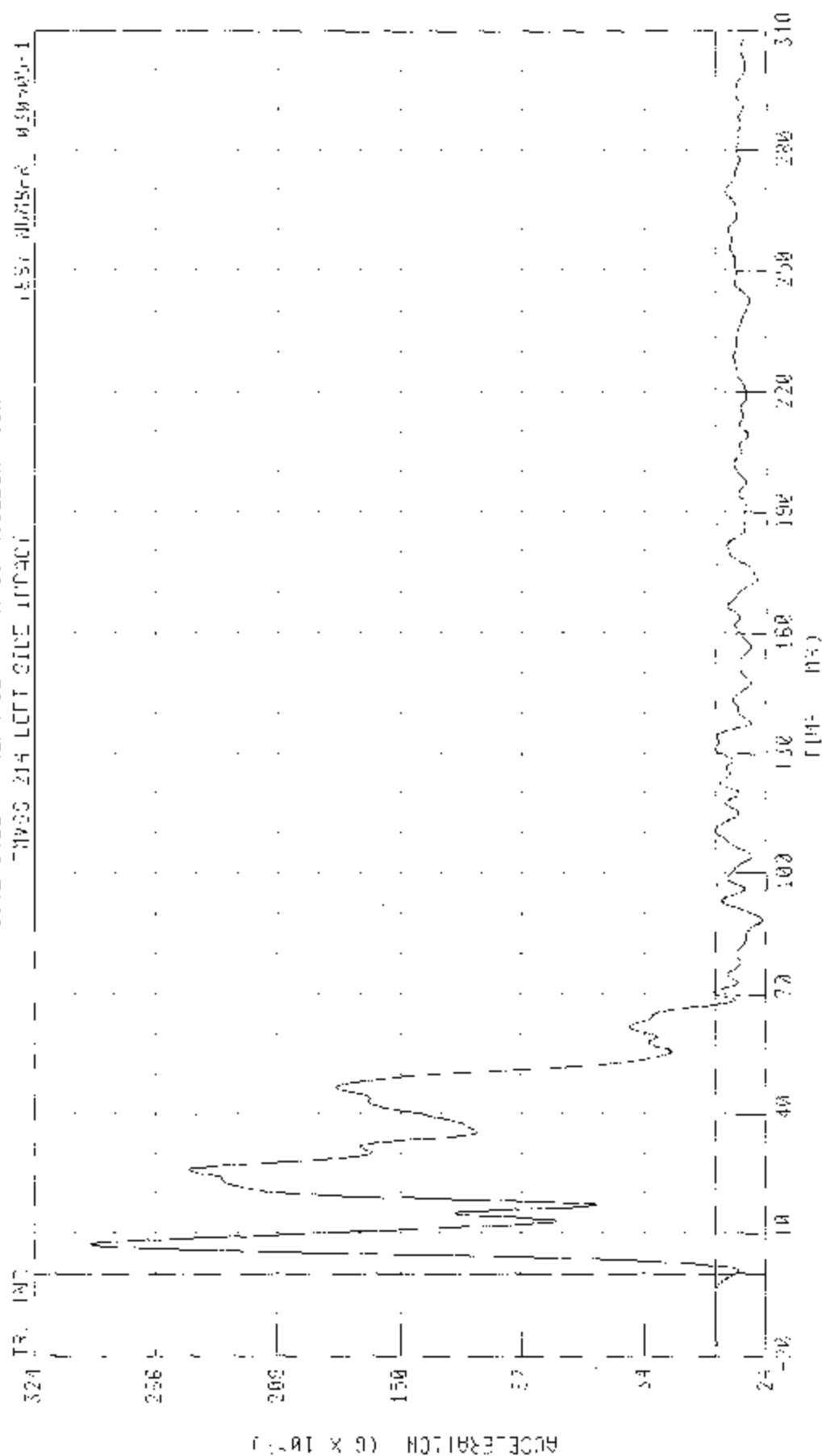


CHANNEL : BRSSX1 FILTER : CP CLASS : 130

REFR DATE 06 KPH 0 1 92 45 3 15 KPH 0 51.89 15

55-28 89-80 D-GRATE S-1-F-1000 (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2002 MLCR-1005-3-N/ 1240

STRICT SIDE SLEEPER? ANSWER: YES



00:00:00 00:00:00 00:00:00

[14: 17: 19: 21: 23: 25: 27: 29: 31: 33: 35: 37: 39: 41: 43: 45: 47: 49: 51: 53: 55: 57: 59: 61: 63: 65: 67: 69: 71: 73: 75: 77: 79: 81: 83: 85: 87: 89: 91: 93: 95: 97: 99: 101: 103: 105: 107: 109: 111: 113: 115: 117: 119: 121: 123: 125: 127: 129: 131: 133: 135: 137: 139: 141: 143: 145: 147: 149: 151: 153: 155: 157: 159: 161: 163: 165: 167: 169: 171: 173: 175: 177: 179: 181: 183: 185: 187: 189: 191: 193: 195: 197: 199: 201: 203: 205: 207: 209: 211: 213: 215: 217: 219: 221: 223: 225: 227: 229: 231: 233: 235: 237: 239: 241: 243: 245: 247: 249: 251: 253: 255: 257: 259: 261: 263: 265: 267: 269: 271: 273: 275: 277: 279: 281: 283: 285: 287: 289: 291: 293: 295: 297: 299: 301: 303: 305: 307: 309: 311: 313: 315: 317: 319: 321: 323: 325: 327: 329: 331: 333: 335: 337: 339: 341: 343: 345: 347: 349: 351: 353: 355: 357: 359: 361: 363: 365: 367: 369: 371: 373: 375: 377: 379: 381: 383: 385: 387: 389: 391: 393: 395: 397: 399: 401: 403: 405: 407: 409: 411: 413: 415: 417: 419: 421: 423: 425: 427: 429: 431: 433: 435: 437: 439: 441: 443: 445: 447: 449: 451: 453: 455: 457: 459: 461: 463: 465: 467: 469: 471: 473: 475: 477: 479: 481: 483: 485: 487: 489: 491: 493: 495: 497: 499: 501: 503: 505: 507: 509: 511: 513: 515: 517: 519: 521: 523: 525: 527: 529: 531: 533: 535: 537: 539: 541: 543: 545: 547: 549: 551: 553: 555: 557: 559: 561: 563: 565: 567: 569: 571: 573: 575: 577: 579: 581: 583: 585: 587: 589: 591: 593: 595: 597: 599: 601: 603: 605: 607: 609: 611: 613: 615: 617: 619: 621: 623: 625: 627: 629: 631: 633: 635: 637: 639: 641: 643: 645: 647: 649: 651: 653: 655: 657: 659: 661: 663: 665: 667: 669: 671: 673: 675: 677: 679: 681: 683: 685: 687: 689: 691: 693: 695: 697: 699: 701: 703: 705: 707: 709: 711: 713: 715: 717: 719: 721: 723: 725: 727: 729: 731: 733: 735: 737: 739: 741: 743: 745: 747: 749: 751: 753: 755: 757: 759: 761: 763: 765: 767: 769: 771: 773: 775: 777: 779: 781: 783: 785: 787: 789: 791: 793: 795: 797: 799: 801: 803: 805: 807: 809: 811: 813: 815: 817: 819: 821: 823: 825: 827: 829: 831: 833: 835: 837: 839: 841: 843: 845: 847: 849: 851: 853: 855: 857: 859: 861: 863: 865: 867: 869: 871: 873: 875: 877: 879: 881: 883: 885: 887: 889: 891: 893: 895: 897: 899: 901: 903: 905: 907: 909: 911: 913: 915: 917: 919: 921: 923: 925: 927: 929: 931: 933: 935: 937: 939: 941: 943: 945: 947: 949: 951: 953: 955: 957: 959: 961: 963: 965: 967: 969: 971: 973: 975: 977: 979: 981: 983: 985: 987: 989: 991: 993: 995: 997: 999]

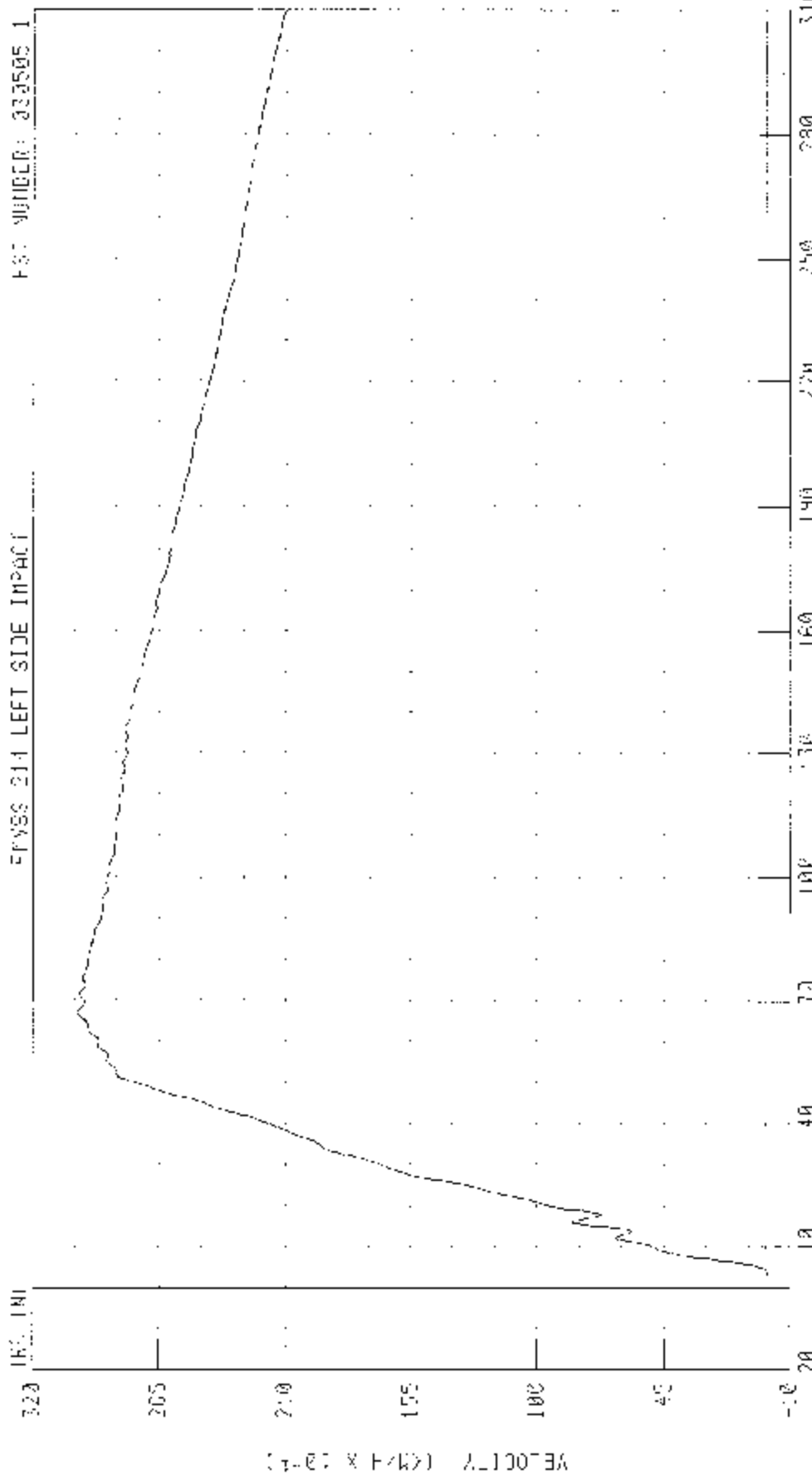
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55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCHANDISER-PH 1/ 2240

RIGHT SIDE BOLLARD REAR SEAT Y AXIS VELOCITY

TEST NUMBER: 030505-1

SPSS 214 LEFT SIDE IMPACT

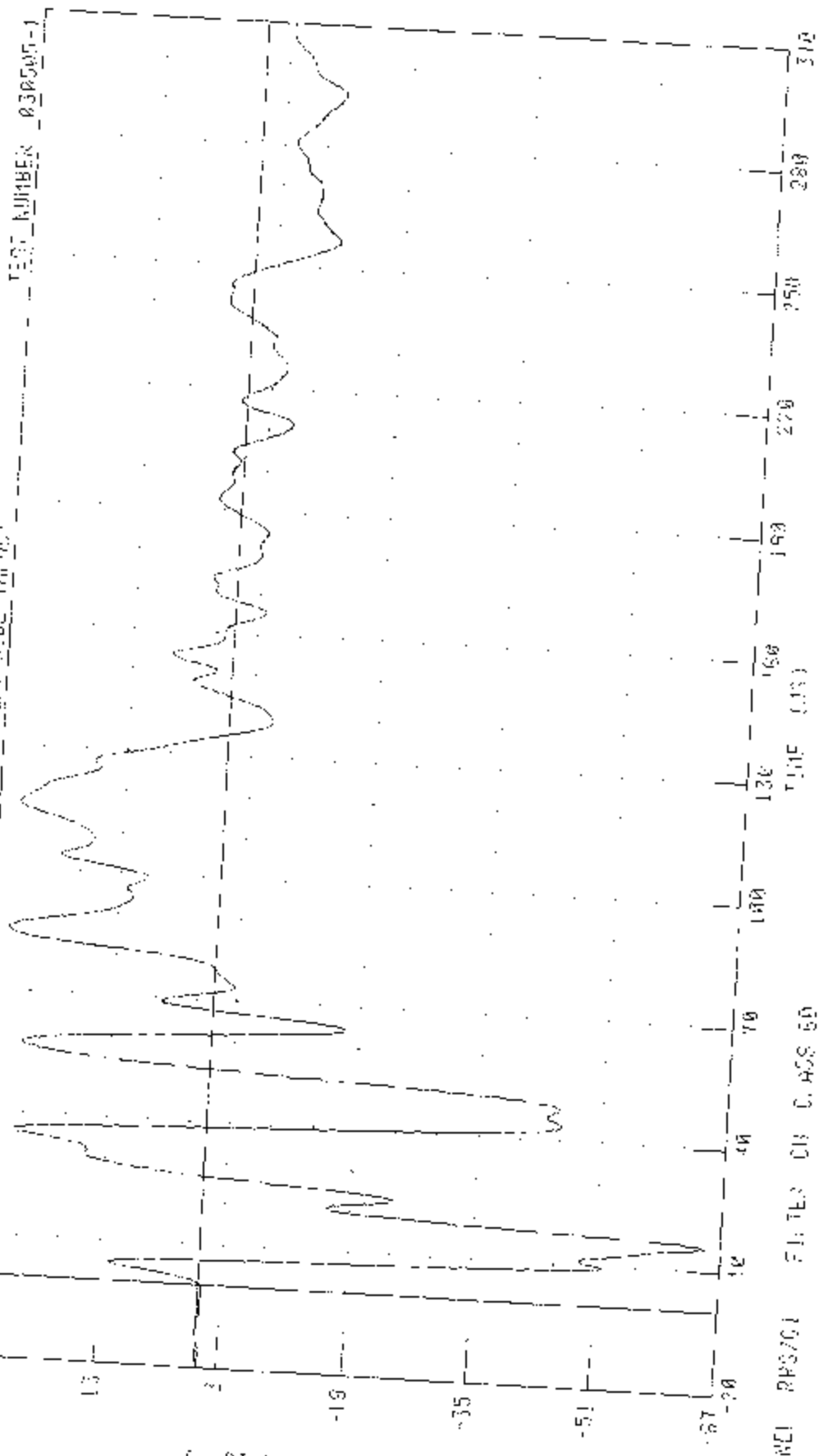


TIME (MS)

CHANNEL: RESEVO - FILTER ON CLASS: 100

FILE NAME: 030505-1.DAT 07 12 HS 0 00 01 H 0 3 75 HS

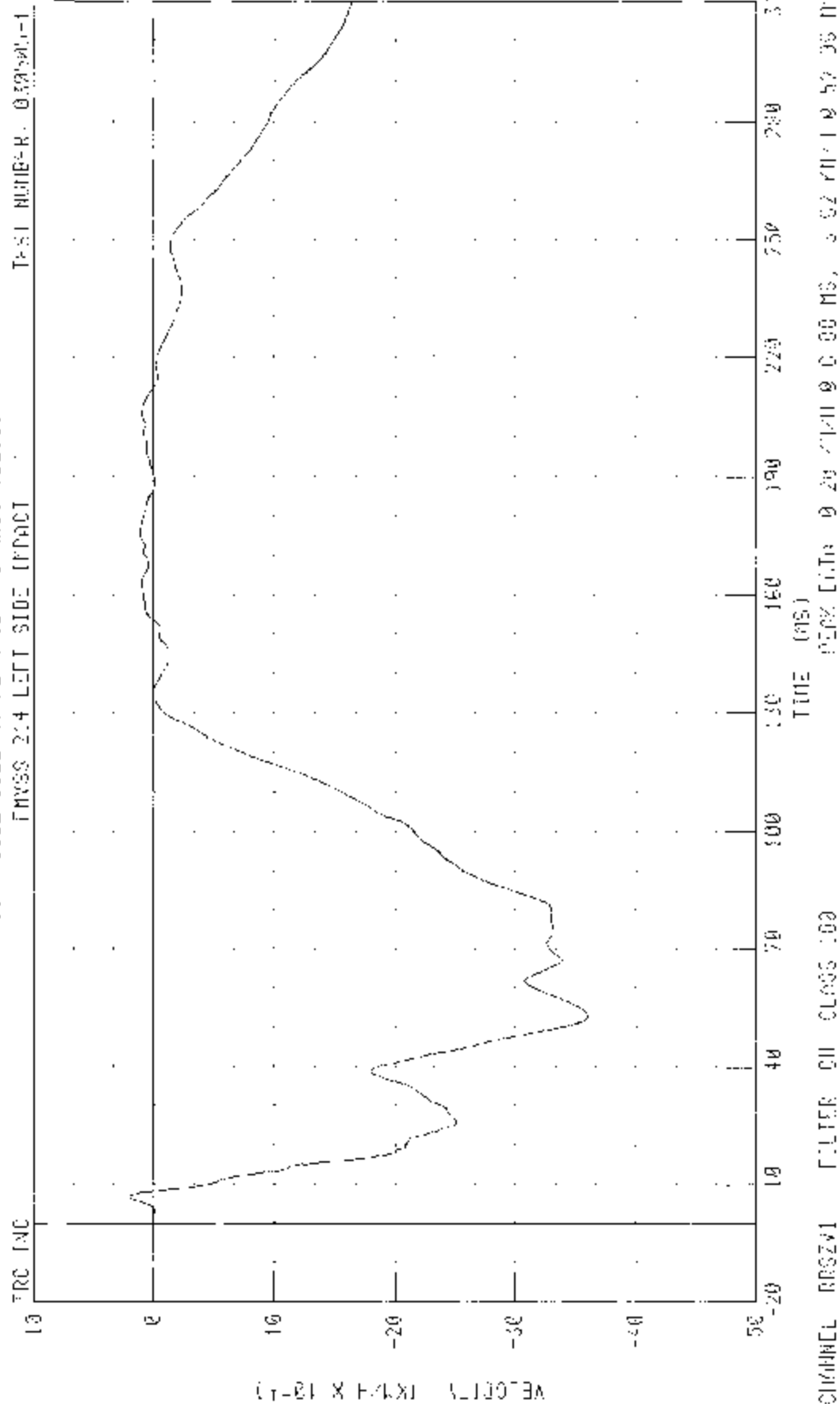
55-229 KPM 20 DEGREE SIDE IMPACT (MOVING OFFSHORE) BARRETER) INTO LEFT SIDE OF 2003 HERRING'S HENZ 0240
 RIGHT SIDE SILL AT 200K SEAT 2 HRS COOPERATION
 WASS 214 LEFT SIDE IMPACT



CH00001 2003701 FILTER ON C.WCS 60
 TIME (MS) 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310
 TIME DATA 2 60 0 0 80 44 MS -0 52 0 0 15 64 MS

VOLTAGE (0 X 10^-1)

55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO FFT SIDE OF 2MM3 MER. FMS-BENZ C240
 RIGHT SIDE SILL AT REAR SEAT 2-AXIS VELOCITY

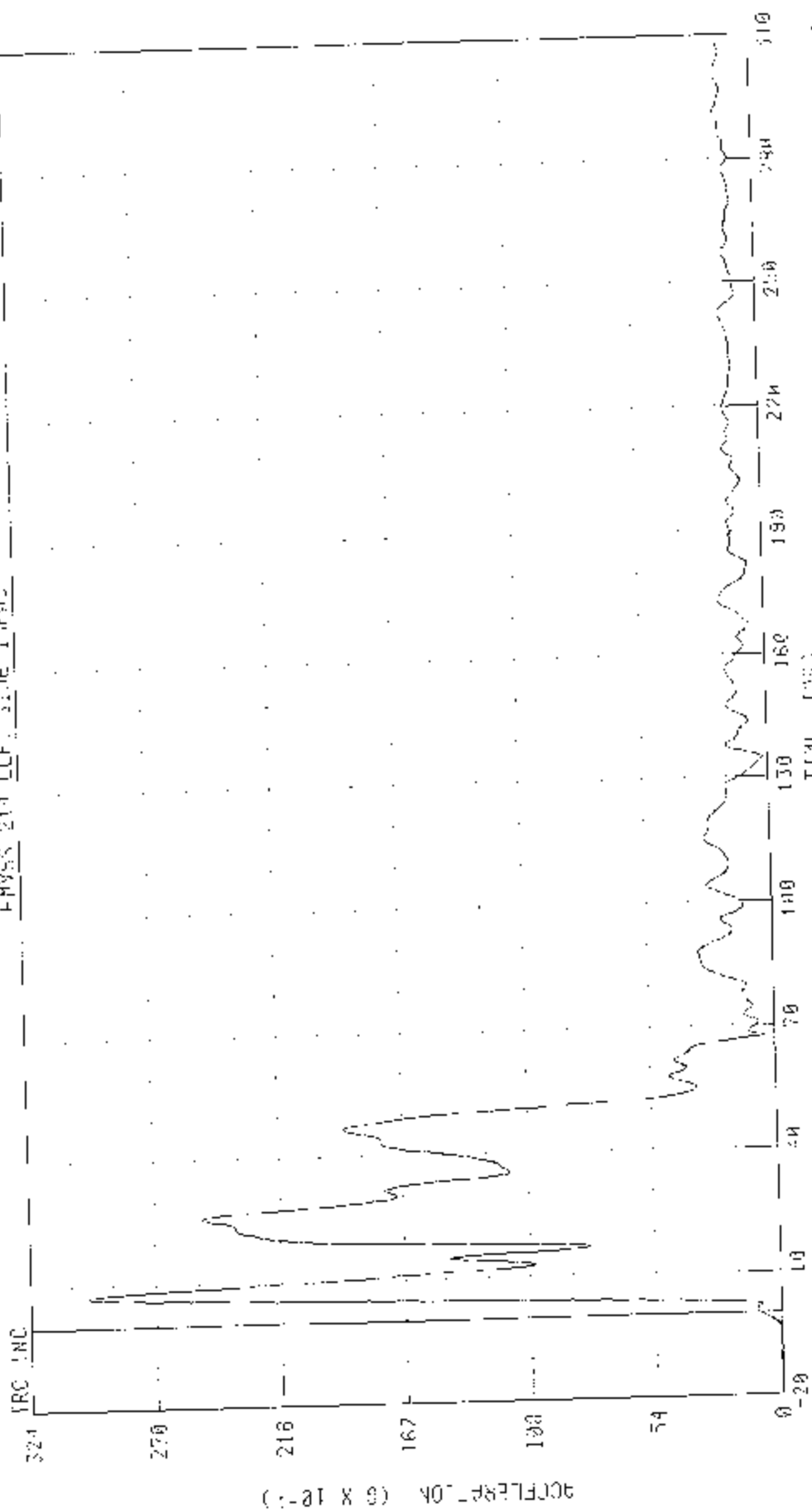


50/20 MPH 30 DEGREE SIDE IMPACT CRASHING DEFORMABLE BARRIER: INFO LEFT SIDE OF 2093 PERIOD-S D-HZ C-10

RIGHT SIDE SILENT BEAR RIGHT REGULATION FOR ACCELERATION

TEST NUMBER: 0000051

PMSS 214 LEFT SIDE IMPACT



TITLE (13)

PEAK CALIB: 25 91 0 0 7 00 15, 0 00 0 0 0 0 0 0 15

CHANNEL: ERS001 FILTER: CH C:MS0 60

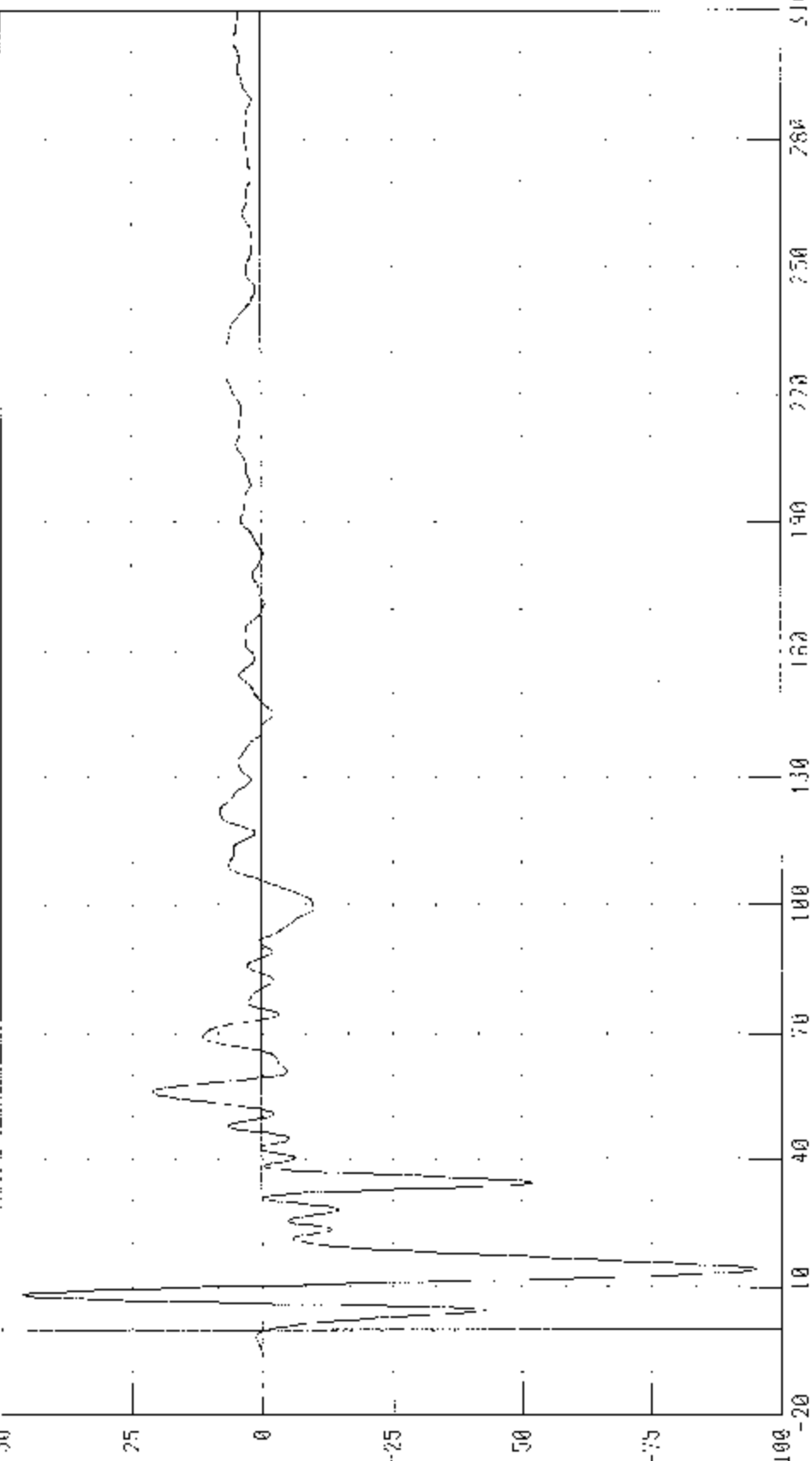
55/23 KPH 90 DEGREE SIDE IMPACT (MOVING DEFORMABLE BARRIER) INTO LEFT SIDE OF 2003 MERCEDES-BENZ C240

REAR FLOORPAN ABOVE ORIF X-AXIS ACCELERATION

TEST NUMBER 030505-1

HYSS 214 LEFT SIDE IMPACT

TRC INC.



ACCELERATION (G X 10^-1)

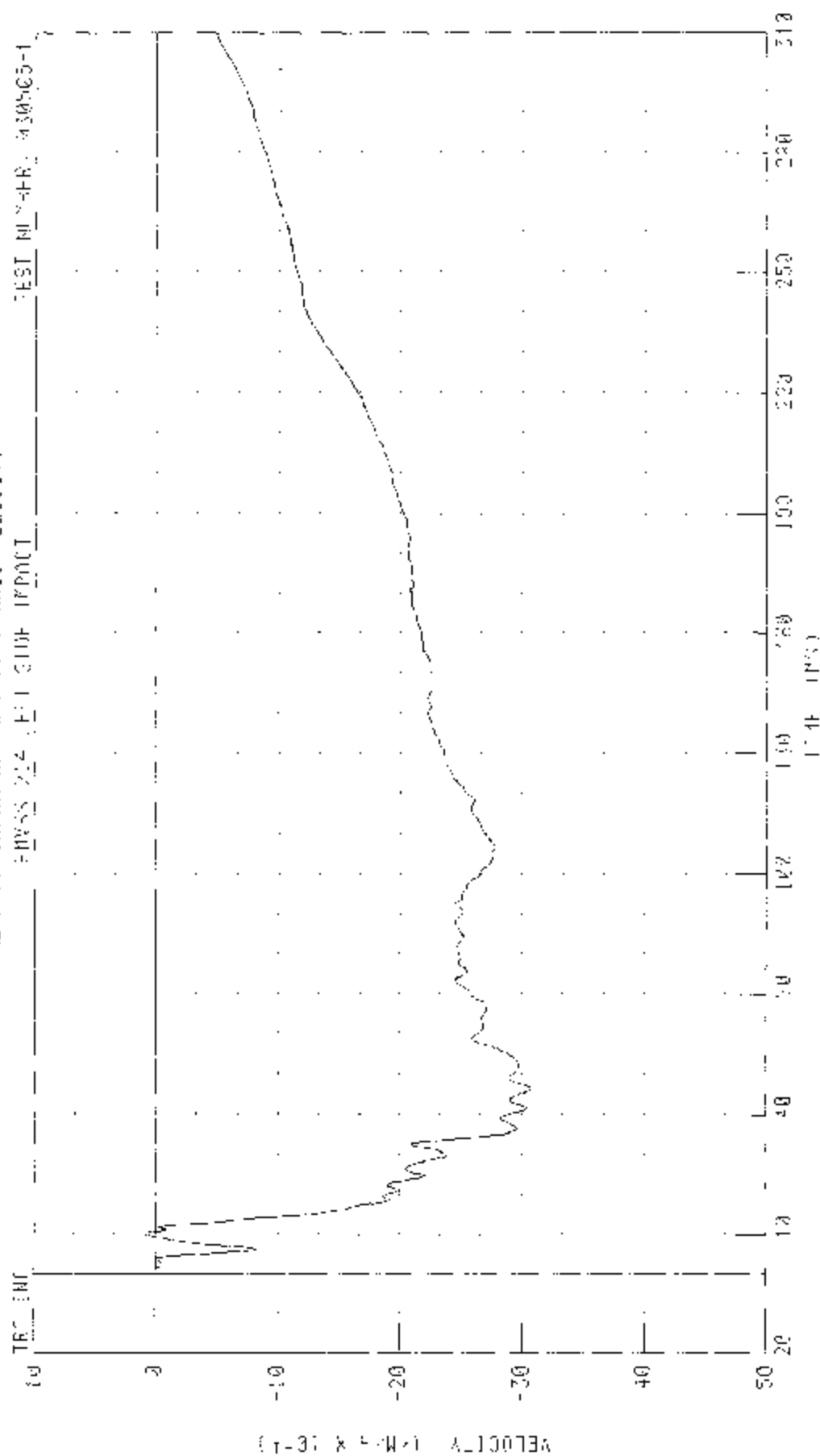
TIME (MS)

PEAK FILTER 461 0.6 3.2 15; -2.53 0.0 14 24 PS

CHANNEL HDX01 FILTER CH CLASS 00

55478 KPE ON GEORGE STATE IMPACT: INVOLVING DEFORMABLE BARRIERS. INTO LET. JUNE 07 2003 RECD CDS-BEN/ 0234H

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